HOME SCIENCE
POST GRADUATE PROGRAMMES
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POST GRADUATE PROGRAMMES
FOREWORD

Renewing and updating of the Curriculum is the essential ingredient of any vibrant university academic system. There ought to be a dynamic Curriculum with necessary additions and changes introduced in it from time to time by the respective university with a prime objective to maintain updated Curriculum and also providing therein inputs to take care of fast paced development in the knowledge of the subject concerned. Revising the Curriculum should be a continuous process to provide an updated education to the students at large.

Leaving a few, there have been many universities where this exercise has not been done for years together and it is not uncommon to find universities maintaining, practicing and teaching still on the Curriculum as old as few years or even more than a decade. Not going through the reasons for this inertia, the University Grants Commission, realising the need in this context and in relevance to its mandate of coordinating and maintaining standard of higher education, decided to adopt a pro-active role to facilitate this change and to ensure that the university Curriculum are soon updated to provide a standard education all over the country.

Curriculum Development Committee for each subject was constituted with the respective Convenor as its nodal person. The Committee besides having five subject experts drawn from the university system, was given a wider representation of various sub subject experts attending meetings of the Committee as the esteemed co-opted members which kept on changing from time to time as the need arose. The Committees, therefore, had representations from a large number of experts and had many meetings before final updated Model Curricula were presented to UGC.

The University Grants Commission and I as its Chairman are grateful to the nodal persons, a large number of permanent and co-opted members in different subjects and their sub disciplines for having worked seriously with committed devotion to have produced a UGC Model Curriculum in 32 subjects within a record period of 18 months.

The exercise would not have been possible without the support of our entire academic community. We can only hope that the results will fulfil their expectations and also those of university community and Indian society.

The UGC Model Curriculum has been produced to take care of the lacuna, defects/ shortcomings in the existing Curricula in certain universities, to develop a new Model Curriculum aiming to produce the one which is compatible in tune with recent development in the subject, to introduce innovative concepts, to provide a multi disciplinary profile and to allow a flexible cafeteria like approach including initiating new papers to cater to frontier development in the concerned subject.

The recommendations have been compiled by panels of experts drawn from across the country. They have attempted to combine the practical requirements of teaching in the Indian academic context with the need to observe high standards to provide knowledge in the frontier areas of their disciplines. It has also been aimed to combine the goals and parameters of global knowledge with pride in the Indian heritage and Indian contribution in this context.
Today all knowledge is interdisciplinary. This has been duly considered. Flexible and interactive models have been presented for the universities to extend them further as they would like. Each institution may have to work out certain uniform structures for courses at the same level, so that effective interaction between subjects and faculties is possible. The tendency across the country is now to move from the annual to the semester system, and from award of marks to award of credits. There is perceptible growing interest in modular framing as well.

The recommendations while taking all these features into account, have also made provisions for institutions who may not be in a position to undertake radical structural reform immediately. In any country, especially one as large and varied as India, academic institutions must be allowed enough autonomy and freedom of action to frame courses according to specific needs. The recommendations of the Curriculum Development Committees are meant to reinforce this. The purpose of our exercise has been to provide a broad common framework for exchange, mobility and free dialogue across the entire Indian academic community. These recommendations are made in a spirit of openness and continuous improvement.

To meet the need and requirement of the society and in order to enhance the quality and standards of education, updating and restructuring of the curriculum must continue as a perpetual process. Accordingly, the University Grants Commission constituted the Curriculum Development Committees. If you need to seek any clarification, you may contact Dr. (Mrs.) Renu Batra, UGC Deputy Secretary and Coordinator of CDC who shall accordingly respond to you after due consultation with the respective nodal person of the concerned subject.

The University Grants Commission feels immense pleasure in forwarding this Model Curriculum to the Hon'ble Registrars of all Universities with a request to get its copies made to be forwarded also to the concerned Deans and Heads of Departments requesting them to initiate an early action to get their Curriculum updated. The University Grants Commission Model Curricula is being presented to the Registrar of the university with options either to adopt it in toto or adopt it after making necessary amendments or to adopt it after necessary deletion/addition or to adopt it after making any change whatsoever which the university may consider right. This UGC Model Curriculum has been provided to the universities only to serve as a base and to facilitate the whole exercise of updating the Curriculum soon.

May I request Hon'ble Vice Chancellor and the Hon'ble Registrar including the esteemed Deans, Heads of Departments, Members of the Faculty, Board of Studies and Academic Council of the Universities to kindly update their Curriculum in each of the 32 subjects in consultation with Model Curriculum provided here. This has to be done and must be done soon. May I request the Academic administration of the universities to kindly process it immediately so that an updated Curriculum is adopted by the university latest by July, 2002.

The University Grants Commission requests the Hon'ble Registrars to confirm that this time bound exercise has been done and send a copy of the university's updated Curriculum in each subject to UGC by July 31, 2002. It is a must. It has to be done timely, failing which, the UGC may be forced to take an appropriate unpleasant action against the concerned university.

The UGC looks forward for your active participation in this joint venture to improve the standards to achieve excellence in higher education.

December 2001

HARI GAUTAM
MS (SURGERY) FRCS (EDIN) FRCS (ENG)
FAMS FACS FICS FACS DSc (HON CAUSA)
CHAIRMAN, UGC
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PREFACE

As per the mandate of the University Grants Commission, updating/framing the curricula in various disciplines is the crux of improving the quality of higher education. A Curriculum Development Committee for Home Science was constituted in September 2000 to review the status and update the curricula as per the developmental trends, incorporating multi-disciplinary skills, linking the general studies with professional courses, modular system, flexibility to the credit based system, allowing both the vertical and horizontal academic mobility etc. while framing/reframing the Curriculum. The Curriculum so prepared is based on the status of the existing Curriculum, the achievements of the disciplines, the identified lacunae and the employment opportunities of an interdisciplinary field like Home Science.

Home Science is an interdisciplinary field of studies comprising of Foods and Nutrition, Human Development, Resource Management, Textiles and Clothing and Extension & Communication. Each of these Departments is also multi-disciplinary in nature dealing with the 'art and science of living'. The individual, the family and the community are the foci of Home Science. The security and development of the family is so much part of the social fabric of individuals and communities which will be reflected in the Curriculum of Home Science which needs to be gender neutral, family focussed with career perspectives and region specific. Specific efforts are made to offer the courses in such a way that both men and women will be attracted to these courses from urban and rural areas. Thus Foods and Nutrition has vast scope ranging from alleviation of malnutrition from the micro to macro level, preventive, promotive and therapeutic care in hospitals, in food industries as well as food service managers in various establishments. Textiles and Clothing can have family and industrial orientation in today’s market economy with an entrepreneurial base. India being one of the foremost garment exporting countries and also having a huge domestic market, there is enough scope for academic development and commercial applications. Similarly, women and development and environment are major social and political concerns which need to be addressed in Home Science education to make development gender sensitive, relieve drudgery of women’s work by innovating appropriate science and technology. There is need to generate considerable research data for policy development of women in the context of a patriarchal society.

Home Science places considerable emphasis on human development across the life span. Some specific areas of studies are early childhood education, family life education, gender sensitization, child abuse, helpline for children and women, non-formal education, adolescence, environment, etc. Strategies for change have to be initiated for empowering the individual, the family and the community.

Curriculum should have an integrated approach of combining theory and practicals and fieldwork. Competency based courses have sound market value and would lead to social and economic empowerment. Field placement should be incorporated to allow for the integration of skills in the learning processes with transfer of knowledge from laboratory to classroom and from classroom to field.

Dr. Armaity Desai, former Chairperson, UGC stated in her inaugural address at the Biennial Conference of the Home Science Association of India in 1995: “The quality of life of society and the family determines positive functioning... Home Science has a vital role to play in increasing the capacity of the family and the community for a better quality of life through the
competencies they develop as graduates. Not only are they empowered through such competency based career development, but in turn, they can extend it through their work to the community and vulnerable groups, thus leading to social and economic development.”

The Home Science curriculum as it exists today is offered in a composite form in many institutions and only in a few institutions, specializations are offered. The Home Science discipline has a socio-economic and socio-political backdrop to meet the challenges in the global context. At the macro level, we have problems of population, violence, gender inequality, problems of the environment, economic issues related to the food production etc. At the micro level, we have the family, the household, the people, and the individuals in the family, particularly women and children. The Home Science discipline, therefore, becomes an integrated body of knowledge from Social, Biological and Physical Sciences, Technology and Management all interwoven to enhance the quality of life.

The Home Science panel constituted by UGC in 1995 under the Convenorship of Dr. Philomina Reddy had developed the base for the Curriculum Development in Home Science. The team included Prof. A. Shukla, Mrs. F.Z. Tarapore, Prof. N. Kamalamma, Prof. B.N.Chaulkar, Prof. M.B. Singh, Dr. Seethalakshmi, Dr. T.S. Saraswathi, Dr. Neerja Sharma, Dr. Ravikala Kamath, Dr. M.A.Varghese, Dr.N.Ogale, Mrs. R.K. Tara Chandrika, Dr. Shobha Udipi, Mrs. Arvind Wadhwa, Dr. Ramesh Puri, Dr. Parvathy Easwaran, Dr. Kumud Khanna, Dr. Lavanya Mazumdar, Dr. Naomi DeSouza, Dr. R.Vatsala, Dr. L. S. Saraswathi, Dr. Ajit Randhawa, Dr. Tej Verma, Dr. Z. Ali, Mrs. Amelia Mullens, Dr. P.Sundaram, Dr. Asha Rane, and Dr. Usha Nayyar.

The present curriculum guidelines have evolved out of the basic framework developed by the Curriculum Development Committee of 1995 and I would like to acknowledge the members of that Committee who have contributed to this arduous task.

In the present context, the resource persons who have contributed to the development of the Curriculum are Dr. Kumud Khanna, Dr. Shobha Udipi, Mrs. Arvind Wadhwa, Dr. Neerja Sharma, Dr. Ravikala Kamath, Dr. Kamalamma, Dr. Veena Mistry, Dr. Philomina Reddy, Dr. N. Bhattacharya, Dr.Ela Dedia, Dr. B. Patwardhan, Dr. B. Tavawalla Dr. T.S. Saraswathi and Dr. M.A.Varghese, who acted as the Nodal Person.

The resource persons had considered various concerns of the present status of Home Science Curriculum, especially in terms of the variety of programmes offered under the Faculty of Arts, Faculty of Science and the Faculty of Home Science. Many of these programs required greater emphasis on career development as well as entrepreneurial competence. Further, the programs have to be developed to be relevant and contextualized to the needs of the society.

A strong need was felt in making the course modular and credit-based. Assessment of learner's needs, societal needs, socio-cultural issues and development, introduction of internship and appropriate fieldwork was required to be introduced. Besides this, consideration was also given to emerging areas of technology with special thrust on Information Technology to make it relevant to the present day needs and career options. Enhancement of competencies and professional skills and the extensive and in-depth coverage in the programs necessitated the semester system to be followed. This will be a valuable document for curriculum planners of Home Science in Colleges and Universities.

I acknowledge the contributions of all resource persons for framing the Curriculum and Dr Hari Gautam, UGC Chairman for the financial support and encouragement and Dr Renu Batra and Dr H.K. Chauhan, Sr. Research Officer, for providing the administrative support.
INTRODUCTION

Post Graduate Programme in Home Science
(Family and Community Sciences)

Post Graduate programme in Home Sciences essentially focus on professional development of graduates to become experts in the area of Family and Community Services. The undergraduate programme of Home Science has been planned to incorporate career development in the areas of Foods and Nutrition, Textiles and Clothing, Human Development, Resource Management and Extension and Communication. The different sub-specialisations under each department include the following areas.

Foods & Nutrition
- Dietetics
- Community Nutrition
- Institutional Food Service Management
- Bakery & Confectionery

Textiles & Clothing
- Garment Design
- Textile Design

Human Development
- Early Childhood Care & Development
- Education of the Child with special needs
- Family & Child welfare

Resource Management
- Interior Design
- Management of Family and Organisations
- Consumer Studies

Extension & Communication
- Development Project Management
- Media Development.
After realising the number of career options in the various disciplines, the nodal committee realised the need for developing the post graduate programmes, considering the level of the undergraduate programme, the career aspirations of the students and the changing socio-economic and technical environment in which the families and communities operate. Great care is taken to make the curriculum flexible and modular in nature which offer a choice based curriculum for the Home Science programme. The programme has deviated from the rigid structure followed earlier to make it a development oriented flexible system incorporating latest trends in the disciplines. The student would feel free to choose an elective from the department itself to strengthen the knowledge base and acquire extra skills or choose courses from another department/s to suit the needs and interests of the learner and the career she/he is pursuing. This flexibility would give the student wider options to choose from and at the same time equipping them with multiple skills for a wide variety of career options. Thus the programme is offered semester wise, with the credit based choice system which requires the advisory function mandatory from the department to guide the student to select the courses according to his/her interest and availability of the course in a particular semester. Research and seminar are an integral part of the programme of studies, which enables them to have investigative and research skills with a spirit of inquiry and communication skills. Internship or work experience is mandatory for each specialization which will be arranged during or after the completion of the course depending on the learner’s readiness and the employers convenience.

On the whole, the programme planned are enriched with cognitive, affective and practical components with adequate work experience relevant to the areas of specialization which the employer would find it adequate and the students would find it meaningful.

In each department, there are some core courses, which are compulsory for all the students to take and which would also give a strong foundation for the field and specializes further into an area of their interest.

The time available amounts to a maximum of 180 hrs at the rate of 30 hrs per week for 30 weeks in a year for two years.

The format for the curriculum in Home Science is given with each area of specialization with the scheme of instruction. The courses are tentatively assigned for all the semesters with the course code, the title of the paper, theory and practical credits, the number of periods and the total marks for the paper and at the end of the course outline the reference list. The first digit of the code signifies the year of study, the second digit the department and the rest of the 3 digits are the running numbers of the course in sequence.
ACKNOWLEDGEMENTS

The nodal person for the Home Science Curriculum Development Committee acknowledge with great gratitude the initiative the Chairman, University Grants Commission has taken in the formulation of the Post-Graduate Curriculum in Home science. Dr. Hari Gautam has inspired the committee with his valuable guidance and innovative ideas for this arduous task of developing the curriculum in Home Science, which is a multi discipline. It is both an applied science and art from the family and Professional perspective.

The curriculum for undergraduate programme in Home Science is already released for publication. This publication presents the guidelines and course contents for Post-graduate programme in Home Science. This is the outcome of several consultative meeting with expert groups and committee and sub-committee working on many aspects of the curriculum.

The convener expresses her thanks to Vice Chairman, UGC, Dr. Arun Nigvekar, Dr. Renu Batra, Joint Secretary for their unstinting support and Dr. H.K. Chauhan, Mrs. Surjit Anand, for the help given to co-ordinate the work of the committee in completing the task. She acknowledges thankfully the co-operation rendered by the following members of the committee in drawing up the curriculum for their respective departments.

1. **Foods and Nutrition**
   - Dr. Kumud Khanna
   - Dr. Aravind Wadwa
   - Dr. Shobha Udipi
   - Dr. Veenu Seth

2. **Human Development**
   - Dr. Veena Mistry
   - Dr. Ravikala Kamath
   - Dr. Neerja Sharma

3. **Extension & Communication**
   - Dr. Kamalamma
   - Dr. Anjali Capila

4. **Resource Management**
   - Dr. Premavathy Seetharaman
   - Dr. Nalini Ogale
   - Dr. M.A. Varghese
5. **Textiles and Clothing**

   Dr. Veena Kapur  
   Ms. Shashi Chaudhary

Besides these members who met at the various meetings, the following departments of the various colleges/universities have been very helpful in developing the curriculum.

1. **Dept. of Foods and Nutrition**

   S.N.D.T. Women's University,  
   Lady Irwin College,  
   Institute of Home Economics,  
   M.S. University, Baroda.

2. **Dept. Extension and Communication**

   Gandhigram University,  
   Lady Irwin College,  
   SNDT Women's University,  
   M.S. University.

3. **Dept. of Human Development**

   M. S. University,  
   SNDT Women's University,  
   Lady Irwin College.

4. **Dept. of Resource Management**

   SNDT Women's University,  
   Institute of Home Economics,  
   Gandhigram University,  
   M.S. University.

5. **Dept. of Textile and Clothing**

   Lady Irwin College,  
   Institute of Home Economics  
   M.S. University,  
   SNDT Women's University

Consultations were also done with prominent research organizations and other industrial groups for modernizing the curriculum like BARC, VJTI, JDBIMS SIES School of Packaging, etc. These guidelines are bound to be helpful to the Universities and Colleges offering or are likely to start Post-graduate Courses in Home Science.

I record my appreciation for the contribution made by all towards the development of the curriculum and the documentation done by the post graduate department in Home Science of S.N.D.T. Women's University, the computer staff and other non-teaching staff.

Dr. M.A. Varghese
EXTENSION AND COMMUNICATION

The Extension and Communication programme at the post graduate level is designed to extend the application of Home Science knowledge and allied discipline to the families and communities with professional excellence. This multi-disciplinary programme emphasizes skill enhancement in developmental planning and communication through a balanced combination of academic and training inputs. The emphasis is on preparing personnel for working with and for the people and developing media relevant to strengthen the extension services.

The core courses planned under the programme with 40-45 percent weightage give a strong foundation for the two-specialisation courses – Extension and Communication. The issues of national concern are reflected in the curriculum with a focus on linking women and children to mainstream national development programmes.

Objectives:

● To orient students to the socio-cultural and economic environment of rural, urban and semi urban communities.
● To prepare a cadre of professionals to work with governmental and non-governmental organisations in various capacities.
● To enhance self-employment potential through entrepreneurial skill training.
● To develop competency in the preparation of participatory and innovative communication strategies for the dissemination of vital information to vulnerable sections of the population.
● To channelise the potential to become Development Media specialists with an orientation to Development Journalism, Media Research and a sensitivity to the vast heritages and oral traditions of the country.
● To develop skills in planning, implementing, monitoring and evaluating various programmes in the developmental sector.

Eligibility:

● The candidates should have completed 10+2+3 with B.Sc. Extension and Communication or B.Sc. Home Science.
● Those who have graduated in allied fields like sociology, anthropology or social work will have to do additional/remedial courses if admitted to the programme as per the recommendation of the Advisor/Head of the Department.
# LIST OF COURSES

## CORE COURSES

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Internship 6 to 8 weeks – spread over two years as per convenience of program, students and organisations

## RESEARCH COURSES

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*Compulsory papers*
# M.SC. EXTENSION & COMMUNICATION

## Scheme of Instruction

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* Compulsory papers

Internship 6 to 8 weeks – spread over two years as per convenience of program, students and organisations
A total of 60 credits have to be taken by the student to complete the programme. If the number of credits exceeds 60, it is all right, but the calculation of the grade point average will be done on the basis of 60 credits only. Internship is part of the programme of study, but does not carry any credit. This can be arranged during the course of study or after the completion of the programme. It can be arranged in one single assignment or two. A minimum of 6 weeks should be provided for internship for each student under staff supervision.
RESEARCH METHODS AND STATISTICS

Code: 40101
Credits: T 3 P 0
Periods / Week: 3
Marks: 75

Objectives:
- To understand the significance of statistics and research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- To understand and apply the appropriate statistical technique for the measurement scale and design.

Contents:
1. **Science, scientific methods, scientific approach**
2. **Role of statistics and research in Home Science discipline**
   Objectives of research: Explanation, control and prediction.
3. **Types of Research**: Historical, survey, experimental, case study, social research, participative research.
4. Definition and Identification of a Research Problem
   - Selection of research problem
   - Justification
   - Theory, hypothesis, basic assumptions, limitations and delimitations of the problem.
5. **Types of variables**
6. **Theory of probability**
   - Population and sample
   - Probability sampling: systematic random sampling, two stages and multi stage sampling, cluster sampling.
   - Non- Probability sampling: purposive, quota and volunteer sampling/snowball sampling.
7. **Basic principles of Research Design**
   Purposes of research design: Fundamental, applied and action exploratory and descriptive
experimental, survey and case study, ex-post facto, 
Longitudinal and cross sectional

8. **Qualitative Research Methods:**
   - Theory and design in qualitative research
   - Definition and types of qualitative research
   - Methods and techniques of data collection
     - informal group discussions
     - interviews: Key informants, in-depth interviews
     - observations
       - social mapping
       - participatory rapid assessment
       - participatory learning assessment

9. **Data Gathering Instruments:**
   - Observation, questionnaire, interview, scaling methods, case study, home visits, reliability and validity of measuring instruments

10. **Scales of measurement and the appropriate statistical techniques.**
11. **Critical analysis of research.**
12. **Writing a research proposal.**
13. **Analysis of data and research report.**

**References**

INDIAN SOCIO-ECONOMIC ENVIRONMENT: DEVELOPMENT PERSPECTIVES

Code: 41101
Credits: T 3 P 0
Periods/week: 3
Marks: 75

Objectives

- To understand socio-economic structure, organisation and problems of rural, urban and tribal areas.
- To be knowledgeable about Policies of development and their impact.
- To be aware of policies of liberalisation and globalisation and their impact.

Contents

(Theory)

1. Indian economy – structure and organisation of rural, urban and tribal areas
   - Land ownership, occupational hierarchy, dependence on agriculture
   - Caste, class and institutions
   - Roles and status of women
   - Poverty, inequality, unemployment, stagnation
   - Impact of industrialisation on urban life; socio-economic aspects of metropolitan life
   - Historical overview of tribal welfare

2. Socio-economic changes since independence
   - Economic planning and achievements
   - Growth vs Development, Development index, PWLI, HDI, CPI, etc.
   - Rural development – concepts, objectives, importance and historical overview
   - Special programmes for poor, women and children
   - Employment policy – cottage and small industries
   - Land reforms – future programmes
   - Tribal development strategies and policies
- Women and development
- New economic policy and its impact

3. **Industry and agriculture**
   - Industrial development and diversification
   - Industrial policies since 1981
   - Agriculture price and credit policy
   - New economic policy and agriculture

4. **Co-operatives**
   - Philosophy, objectives, types and progress

**References**

3. Bose Ashish: India's Urbanisation, Institute of Economic Growth, Delhi University.
8. Gulati, A.: Indian Agriculture and Open Economy.

**Journals**

1. Economic and Political Weekly.
2. Journal of Rural Development
5. Vohra, Publication of Development, Govt. of India, New Delhi.
COMMUNITY ORGANISATION AND DEVELOPMENT THEORIES

Code: 41102
Credits: T 3 P 1
Periods/week: 5
Marks: 100

Objectives

To enable students:
- To understand the concept, structure and organisation of different types of communities.
- To understand the factors contributing to changes in community, community organisation and their mobilisation for developmental goals.

Contents

1. The Community
   - Definition, concept and characteristics of a community.
   - Structure and organisation of different types of communities: tribal, rural and urban; nature and interrelationship of socio-economic and political influences and different communities; norms, mores and prevalent, customs of different communities.

2. Social Groups and Organisations
   - Concept, types, characteristics of different social groups, interests, attitudes and motivations for affiliation.
   - Dynamics of social group interactions in different types of communities – family and kinship groups, class and class based groups, interest groups and associations.

3. Dynamics of change in community
   - Social Organisations - Family, school, co-operatives and other organisations and their role in community.
   - Factors contributing to change and transition in the structure and organisation of societal institutions; historical and contemporary situation.
   - Religion, socio-political ideologies, imperialism, mass media and communication globalisation and their impact on community.
- Planned change; concept, solution and changes in the concept of planned social change.
- People's participation, concept, types and barriers to participation in bringing about social change; based on analysis of participation for development.

4. Organisations in Development
- Theories of development; people centred development; factors contributing to paradigm shift.
- Organisations involved in development: government, corporate and voluntary sector organisations.
- Analysis of their present role, future potential in facilitating development; inter-sectoral synergy; importance and operation allegation.

5. Community Leadership
- Concept, leadership theories; patterns and characteristics of leaders in different communities.
- Leadership in different organisations involved in development – inter sectoral, gender based analysis.
- Role of leadership in community development.

References
DEVELOPMENT COMMUNICATION

Code: 41103
Credits: T 2 P 2
Periods/week: 6
Marks: 100

Objectives
- To understand the concept of development, its indices and relationship with development communication.
- To understand the concept of development communication and its relevance to fostering development.
- To impart knowledge about the processes involved in developmental communication with special emphasis on design of communication strategy.
- To impart skill and knowledge about the relevance, potential and use of various media in development communication with due consideration to government policies and regulations.

Contents

Theory

1. Basic Concept: Development
   - Definition, basic concept, nature, evolution, significance, functions and dysfunctions, dynamics of development.
   - Models of Development:
     i  Economic growth model
     ii  Social equity model
     iii  Participatory model
   - Indicators of Development–Human Development Index, gender empowerment measure, human poverty index, global ratings of countries based on the indices classification of regions and countries on the basis of development.

2. Basic Concept: Development Communication
   - Definition, evolution with respect to historical and cultural perspective of development communication.
- Nature, role and significance of development communication
- Inter-relationship between development and development communication
- Models of development communication:
  i. Interdependent model
  ii. Dependency model
  iii. Basic needs model
  iv. New paradigm of development
- Approaches to development communication – Diffusion and Extension approach.
- Strategies in development communication

3. **Media in Development Communication**
   - Understanding the role of traditional and modern media in development communication.
   - Use of folk media, puppetry, exhibitions, theatre, posters, print media (newspapers, books, leaflets, IEC material), radio, television and cinema.
   - Government policies and regulations on mass media in India.
   - Planning, organisation, administration and evaluation of Development Communication Programmes.
   - Understanding and analysis of the ongoing govt. and non-governmental efforts in development communication.
   - Sustainable development needs and strategies
   - Participatory approaches in development communication
   - New avenues for development communication – literacy, women and development, human rights, environment
   - National projects of development communication – SITE, Jhabna, talk back programmes.

**Practicals**

**Contents**

1. Analysis of indices of development
2. Preparation of IEC material on various topics for different target audience
3. Dealing with various issues in development communication through the use of folk media, puppetry, radio scripts, leaflets, newspaper stories and reports, exhibitions, computer aided technologies.
4. Project preparation on specific area in development communication.
5. Case studies in development communication.
References

EXTENSION EDUCATION SYSTEMS

Code: 41104
Credits: T 3 P 0
Periods/week: 3
Marks: 75

Objectives
To enable students:
- To understand the changing concept of extension.
- To get acquainted with the trends in extension approaches and models.
- To identify the support system development for extension education.

Contents
1. Conceptual analysis
   - Extension: meaning, changing concept of extension, philosophy, objectives, principles, functions, components of extension and dimension of extension.
   - Extension education: meaning, process and principles of learning in extension.

2. Extension models and approaches
   - Models: Technology – Innovation transfer model, social education model, indigenization model, social action/conscientization models, empowerment participation model, combination models.
   - Approaches: Agricultural extension, commodity specialized, training and visit, participatory, project, farming systems development, cost sharing, educational institution, integrated, area, cluster, and target approach.

3. National Extension Systems
   - Early extension efforts, Community Development Programme:– genesis and growth, objectives, principles, critical appraisal of the community development programme. ICAR extension system, Agricultural Universities, KVK, TTCs. Extension systems of Ministry of Rural Development, Department of Science and Technology, Department of Industries and Department of Women and Child Development. Development work by NGOs, Government- NGO collaboration.

5. **Extension system in other countries**
   Sri Lanka, Indonesia, Philippines, China, Bangladesh, USA and Australia.

**Related Experiences**

1. Visit to Block and DRDA to study the programme support for extension.
2. Visit to District Social Welfare Department to understand the on-going programmes.
3. Discussion with Panchayat officials on the role of Panchayat in rural development.

**References**

STATISTICS & COMPUTER APPLICATIONS

Code: 40102
Credits: T 3 P 1
Periods / Week: 4
Marks: 75

Objectives:
- To understand the role of statistics and computer applications in research
- To apply statistical techniques to research data for analysing and interpreting data meaningfully.

Note: Students should be given hands-on experiences to use appropriate software packages for selected statistical analyses.

Contents:
- Conceptual understanding of statistical measures. Classification and tabulation of data. Measurement of central tendency, measures of variation
- Frequency distribution, histogram, frequency, polygons, Oliver.
- Binomial distribution
- Normal distribution – Use of normal probability tables
- Parametric and non-parametric tests.
- Testing of hypothesis. Type I and Type II errors. Levels of significance
- Chi-square test. Goodness of fit. Independence of attributes 2 x 2 and r x c contingency tables.
- Application of student ‘t’ test for small samples. Difference in proportion for means and difference in means.
- Correlation, coefficient of correlation, rank correlation
- Regression and prediction
- Analysis of variance – one way and two-way classification.
- Experimental Designs
- completely randomized design
- randomized block design
- Latin square design
Postgraduate Home Science

- factorial design
- trend analysis

References
4. SPSS / PC for the IBM PC/XT, SPSS Inc.
TRAINING AND DEVELOPMENT

Code: 41105
Credits: T 3 P 1
Periods/week: 5
Marks: 100

Objectives

To enable the students to:
- To be aware of the overall goals of designing training programmes for development.
- To understand the different methodologies and evaluate their suitability for training goals.
- To conceptualize the training process.
- To develop skills in designing training programmes.
- To provide experiential learning in training methodologies.
- To evaluate sustainability of training programme.

Contents

1. Training and Learning
   - Concept of learning and types of learning, factors affecting learning among adults.
   - Types and methods of learning, learning paradigms- learning knowledge, attitudes, skills, practices, values experiential learning, reflective learning, literative learning.
   - Concept of Training: Goals of training – self-development, action learning, transformation and organisational development, enhancing organisational effectiveness, team spirit.

2. Training Methodologies:
   - Current trends in training methodologies, organisational development approach, competency based training, participatory training methodologies – aspects, advantages, limitations, implications for training process.
   - Training Administration: Policies, guidelines, authority – the formulation of training plans – whom to be given training, when and how?
   - Budget, records, resourcing; use and choice of consultants.
3. **Trainer & Trainee Interface**
   - Roles of a trainer, counsellor, coach, partner, facilitator, teacher, advisor, model, expert.
   - Competencies of a trainer – attitudes, behaviour traits – combining competencies of trainers. Trainer – trainee perceptions
   - Factors affecting, implications on training, building and developing assertive skills.

4. **Training Process**
   - Different phases of training, conceptual models of training, systems approach to training: inputs, process, outputs.
   - Training Strategy and Designs: Training need assessment, planning training programmes, organisational environment, Training facilities and other resources
   - Arranging for strategies from training design. Training methods and interaction styles: classification of training methods, their importance, uses and limitations – selecting, appropriate methods to suit situations and circumstances. Case study, role play, psychodrama, sensitivity, buzz group, group discussion, transactional analysis, process work, micro-lab, business games etc.
   - Evaluation: meaning, purpose, elements of evaluation, approaches to evaluation – reaction level, learning level, behaviour level, results level and evaluation skills.
   - Tools for evaluation.
   - Evaluation types – evaluation for guiding, checking and monitoring for action.
   - Evaluation process – components, process and methods and techniques.
   - Framework for evaluating training programmes, internal and external indicators.
   - Cost, organizational support and other factors facilitating training, post training factors


**Practicals**

1. Designing training programmes for different developmental goals.
2. Developing skills in selection and use of different training methods – case study, role play, psychodrama, buzz group, group discussion, transactional analysis, process work, micro labs, business games etc.
3. Organizing and conducting training programmes.
4. Evaluating training programmes
5. Visit to training and development organizations.

References

GENDER AND DEVELOPMENT

Code: 41106  
Credits: T 3 P 0  
Periods/Week: 3  
Marks: 75

Objectives

To enable students:

- To understand the concept, need, relevance and dimensions of gender empowerment.
- To get sensitised to gender disparities/imbalances and problems of women.
- To understand the efforts at different levels for empowering women.
- To know the support system in the country for women's development.

Contents


4. Policies and Programmes for Women's Development: National Policy for Empowerment of women, policy perspectives, mainstreaming, a gender perspective in the development process. Economic empowerment: Poverty eradication, micro-credit, self-help groups, women and agriculture, women and industry and support services.
Social empowerment: Education, health, nutrition, drinking water and sanitation, housing and shelter, environment.
Legal empowerment: Legal literacy on personal and family laws, role of family court and legal aid centres.
Political empowerment: Role of panchayatiraj in the political empowerment of women.


**Related Experiences**
1. Study of women's status in a community.
2. Identification of women's problems in a community
3. Preparation of an album on women's issues.
4. Assessment of self-concept with reference to identify and power.

**References**
PROGRAMME DESIGN AND EVALUATION

Code: 41107
Credits: T 3 P 1
Periods/Week: 5
Marks: 100

Objectives

To enable students:
- To understand the process of programme planning in extension.
- To develop ability in planning extension programmes.
- To learn the principles and procedures involved in programme planning, implementation and evaluation.

Contents

1. Programme Planning
   - Meaning and importance of programme planning in extension.
   - Principles of programme planning: programme development cycle and its components.
   - Programme projection: difference between programme projection and planning. Identifying felt needs of people, collection of base line data.

2. Plan of Work
   - Meaning, importance, components of a plan of work, developing a plan of work, factors to be considered in preparing the plan of work.
   - Pre-requisites for developing plan, guidelines for developing a written annual plan, criteria for judging the plan of work.
   - Resources for programme planning:
   - Meaning of resource, types of resources, identification and appraisal of resources, resource mapping, computer application for programme planning.

3. Programme Implementation
   - Aspects of execution. Factors responsible for the successful conduct of a programme.
- Role of officials and non-officials in programme implementation.
- Linkages with other agencies. Problems in implementation.

4. **Evaluation and Follow-up**
- Meaning and purpose of evaluation, types of evaluation, self-evaluation, and external evaluation, criteria for evaluation
- Phases of evaluation, tools of evaluation, observation sheet, interview schedule, rating scale and checklist.
- Follow-up: Need for follow-up, methods of follow-up, correspondence, spot visit, meetings.

5. **Documentation**
- Need for reporting and recording.
- Procedures for recording – aspects to be covered.
- Records and registers to be maintained in programme implementing institutions.

**Related Experience**

1. Assessing needs and problems of a target group in a community.
2. Studying the role of functionaries in planning programme.
3. Selection of a problem of the rural community requiring intervention.
4. Development of a plan of action for the problem identified.
5. Conducting the planned programme.
7. Suggestion and follow-up.

**References**


RESEARCH METHODS IN EXTENSION AND COMMUNICATION

Code: 41108
Credits: T 1 P 1
Periods/week: 3
Marks: 50

Objectives

- To understand the research methods specific to extension and communication.

Contents

1. Development of Indicators: Preliminary exploration, developing logical framework, providing empirical contents, and refinement of indicators.


4. Developing Scales for Measuring Qualitative Traits: Social and psychological scale preparation and use – steps in scale preparation, reliability and validity testing, elimination of bias, item analysis, test-retest.


Related Experience

2. Preparation of socio-economic indicators of the families in a group.
3. Training in PRA.
References


ENVIRONMENT MANAGEMENT

Code: 43106
Credits: T 4 P 0
Periods/ Week: 4
Marks: 100

Objectives
- To be aware of the holistic ecological approaches to environment.
- To be aware of the environmental problems, hazards and risks.
- To understand the aspects of environmental pollution and waste management.
- To be aware of the environmental policies, movements and ethics.

Contents
1. Fundamentals of environment
   - Environment definition. Scope of environment studies.
   - Life and the environment. Physico-chemical factors in the environment, changes in the environment – anthropogenic and non-anthropogenic
   - Environmental hazards and risks
   - Natural resource – conservation and sustainable development

2. Eco-system – Earth, Man and Environment
   - Ecosystems of the world
   - Forest ecology
   - Pathways in ecosystem
   - Environment implications of energy use
   - Problems of sustainability of ecosystems

3. Population and Environment
   - Carrying capacity: Limits to population growth.
   - Population growth and natural resources
   - Impact of population growth on economic development and environment
4. **Land and Water Resources of the Earth**
   - Land resources of the earth
   - Land use
   - Water resource of the earth

5. **Factors affecting changes in ecosystem and environment (Socio, economic, cultural and geographic)**

6. **Pollution and Environment with reference to Air, Water, Soil, Noise**
   - Sources of pollution
   - Effects of pollution
   - Remedies to control pollution

7. **Environment and Public Health**
   - Environmental pollution and community health
   - Water borne diseases
   - Air borne diseases
   - Chemical insecticides and its impact on health
   - Toxic actions of metals and biological substances

8. **Waste Management**
   - Types of waste
   - Methods of waste management
   - Water pollution and treatment of waste
   - Solid waste management
   - Air pollution control technology

9. **Environmental Control Measurement**
   - Environmental legislation
   - Environmental policies
   - Human rights issues relating to environment
   - Environment movements
   - Environmental ethics
   - Women and Environment

10. **Role of local municipal authority, government and non-governmental agencies in promoting better health environment.**
References

SUSTAINABLE DEVELOPMENT: INITIATIVES AND APPROACHES

Code: 51109
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives
To enable students:
- Understand the concept of sustainability and development.
- Critically evaluate the interlinkages of people’s participation and sustainable development.
- Understand community resources and identify the trends in the extent and consequences of their utilization.
- Evaluate existing structures and established arrangements for sustainable management of community resources.
- Understand the relationship between environmentally sound technologies and sustainability.

Contents
1. Concept of sustainable development
   - Sustainability – meaning, concept and implications for development. Sustainable development – concept, philosophy, goals and challenges.
   - Dimensions of sustainable development: social, spiritual, economic, educational security.
   - Theories of development, changes in the concept of development, factors leading to change.

2. People’s participation and sustainability
   - People’s participation – history, concepts and controversies, types and forms in development initiatives.
   - Relationship between participation, learning and sustainability. Inter linkages of people’s participation for building local knowledge, capacity of people and local institutions.
3. **Sustainability and community resource perspective**
   - Community resources – a perspective – concept of resources – natural and shared resources, ecological (air, water, fuel, flora, fauna) institutional inputs (community groups/net works understanding resources, their interdependency. Indicators of environmental unsustainability – new paradigm of development.

4. **Management of community resources and sustainability**
   - Trends and changes in the management of community resources. Institutional practices and policies influencing community resource management, community based organisational structures and practices, state, NGOs and other driven structures, policies, advantages and disadvantages.
   - Factors affecting sustainability of community resource management initiatives - institutional sustainability, credibility, public image, style of functioning, human resource accountability.
   - Programme sustainability: participation, capacity building, training, skill development, developing leadership, self-reliance, gender issues.
   - Financial sustainability: corpus funds, assets, net working.

5. **People's initiatives and sustainability**
   - Ecology and resource conservation: concepts, bio diversity, resource conservation methods, renewable energy and resources, role of women.
   - Environmentally sound technologies: their impact on sustainable management of resources, adoption patterns, impact on lives of people, technologies for agriculture, water management, fuel and energy conservation, and soil fertility.
   - Initiatives by different societal structures for food production methods and practices and sustainable farming, water management practices for sustainable management of forests for fuel and fodder needs of communities.
   - Environment and habitat
   - Advantages and lacuna in the initiatives of different societal structures in sustainable community resource management initiatives.

**References**


EXTENSION MANAGEMENT

Code: 51110
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives
To enable students to:
- Understand the concepts and process of management.
- Realise the importance of management for achieving organisational goals.
- Apply the principles of management to the management of extension organisations/services.

Contents
1. Concept of Extension Management
   - Definition, nature and process and need
   - Models and principles of extension management

2. Steps in Extension Management:
   - Co-ordination – meaning, objectives, linkage mechanisms – involvement of organisations at local level –non-profit and profit making organisations.
   - Staffing – meaning, manpower planning, selection – training and development needs-methods-performance appraisal, organisational conflict and conflict resolution, grievance handling.
- Controlling – meaning and process of control – Management Control Techniques – budgetary and non-budgetary control – Modern techniques – PERT, CPM, requirements for effective control system.
- Monitoring and evaluation – meaning, purpose and differences. Types of evaluation, steps in evaluation, efficiency cum performance audit, reporting.

3. **Personal Management**
   - Recruitment of extension workers
   - Classification of positions

4. **Efficiency of Personnel**
   - Orientation to new workers
   - Training of the workers
   - Stimulus and incentives
   - Code of ethics
   - Supervision
   - Appreciation

5. **Qualities of a good extension manager**

**References**

COMMUNITY HEALTH MANAGEMENT

Code: 51111
Credits: T 3 P 1
Periods/Week: 5
Marks: 100

Objectives
- To understand the concept of health and health indices popularly used.
- To realize the health problems of the community and the scientific intervention.
- To know the supportive services and programmes for community health management
- To get sensitised to management information systems in health.

Contents
1. Concept of Health and Health Care

2. Health and Development Indices
   - Health indices and related indices in community health, fertility indicators, vital statistics, mortality, morbidity indicators, demographic indicators – sex ratio, indicators for social and mental health, Human Development Index, Disability Adjusted Life Years (DALY). Reproductive Health Index.

3. Community Health Needs and Problems
   - Health needs and problems related to sanitation and environment, protected water, personal hygiene and pollution control.
   - Ecology and environment, global warming – causes, effects and prevention, natural and man made disaster management.
   - Health needs of special groups – women, infants, children. Health of adolescents, geriatric health needs and problems, tribal health, refugees.
- Major Health problems in India
- Communicable and non-communicable diseases, population problem and its impact, problems of malnutrition, reproductive health problems.

4. **Health Care Services**
   - Health administrative set up, peripheral, state, national – urban, rural, role of NGOs.
   - National Health programmes, child survival and safe motherhood, reproductive and child health programme.
   - Inter-sectoral co-ordination in health and development.
   - National and International Health agencies.
   - Health information, education, communication.

5. **Management Information System in Health**
   - Basic epidemiology, surveillance, health screening, health regulations and acts, health legislations, international health regulations.
   - Census, sample registration system, national family health surveys.
   - Evaluation of health services, health system research.

6. **Ecology and Environment**
   - Cause effects and prevention of global warming, natural and man made disasters.

7. **Health needs of special groups**
   - Infants, young children and adolescents
   - Women
   - Elderly
   - Tribal populations
   - Migrant and refugee populations
   - Urban ad rural poor

**Reference**

DEVELOPMENT PROJECT MANAGEMENT

Code: 51112
Credits: T 2 P 1
Periods/Week: 4
Marks: 75

Objectives

To enable students:
- To get an insight related to components of project planning.
- To provide an overview of the significance of general approach and methods and techniques and
- To impart skills in project planning.

Contents

1. Basic concepts of project planning
   - Basic concepts: Need, problem, project feasibility, planning, project formulation, forecasting, appraisal, PRA, importance and objectives of project formulation – project development cycle and its stages, project classification.
   - Project Identification: Identification of project opportunities, government policy, regulations, incentives and restrictions – methods and techniques of project identification, prioritisation of projects with people’s participation – pre feasibility study.
   - Project Appraisal: Comprehensive appraisal of the key components of the project – project appraisal techniques – decision matrix, systems analysis, urgency and risk analysis, break even point analysis, pay back period analysis, rate of return, MPV profitability and I.R.R analysis, risk analysis and social cost benefit analysis.
   - Project Format: common format of a project proposal – basic and supportive information required for a project; rules governing the preparation of project proposal writing up a project proposal.
Related Experiences

1. Getting familiar with the proposal formats of different funding agencies.
2. Need identification and planning of a project for funding by appropriate agencies and developing project proposal.

References

ENTREPRENEURSHIP MANAGEMENT

Code : 51113
Credits: T 3 P 0
Periods / Week : 4
Marks : 75

Objectives

- To provide conceptual inputs regarding entrepreneurship management.
- To sensitise and motivate the students towards entrepreneurship management.
- To orient and impart knowledge towards identifying and implementing entrepreneurship opportunities.
- To develop management skills for entrepreneurship management.

Contents

1. **Conceptual Framework**
   - Concept, need and process in entrepreneurship development.
   - Role of enterprise in national and global economy
   - Types of enterprise – Merits and Demerits
   - Government policies and schemes for enterprise development
   - Institutional support in enterprise development and management

2. **The Entrepreneur**
   - Entrepreneurial motivation – dynamics of motivation.
   - Entrepreneurial competency – Concepts.
   - Developing Entrepreneurial competencies – requirements and understanding the process of entrepreneurship development, self awareness, interpersonal skills, creativity, assertiveness, achievement, factors affecting entrepreneur’s role.

3. **Launching and organising an enterprise**
   - Environment scanning – Information, sources, schemes of assistance, problems.
   - Enterprise selection, market assessment, enterprise feasibility study, SWOT Analysis.
   - Resource mobilisation – finance, technology, raw material, site and manpower.
- Costing and marketing management and quality control.
- Feedback, monitoring and evaluation.

4. **Growth Strategies**
- Performance appraisal and assessment
- Profitability and control measures, demands and challenges
- Need for diversification

5. **Enterprise Networking**
- Concept and dynamics
- Methods
- Joint venture, co-ordination and feasibility study

6. **Project Work – Planning, resource mobilisation and implementation.**

7. **Preparing project proposal to start on new enterprise and feasibility report.**

**References**

COMMUNICATION TECHNOLOGIES IN EXTENSION

Code: 51114  
Credits: T 2 P 2  
Periods/week: 6  
Marks: 100

Objectives

- To impart knowledge and understanding of various communication systems.
- To provide a sound knowledge base for the relevance and applicability of the various media used in human communication and their complementary role towards each other.
- To enhance the versatility of the students in the selection and use of media in different socio-cultural environments.
- To provide basic knowledge of concept of advertising and use of media in advertising.
- To impart skill in preparation of various Computer Aided Media messages.

Contents

1. Communication Systems
   - Types of communication systems - concept, functions and significance. Interpersonal, organizational, public and mass communication.
   - Elements, characteristics and scope of mass communication.
   - Mass communication - models and theories; role of gatekeepers and opinion leaders.
   - Visual communication - elements of visual design - colour, line, form, texture and space;
   - Principles of visual design - rhythm, harmony, proportion, balance and emphasis.
   - Visual composition and editing.

2. Media Systems: Trends and Techniques
   - Concept, scope and relevance of media in society.
   - Functions, reach and influence of media.
   - Media scene in India, issues in reaching out to target groups.
   - Contemporary issues in media - women and media, human rights and media, consumerism and media.
- Historical background: nature, characteristics, advantages and limitations and future prospects of media.
- Traditional media: role in enhancing cultural heritage, co-existence with modern media systems and applicability in education and entertainment - puppetry, folk songs, folk theatre, fairs.
- Print media: books, newspapers, magazines leaflets and pamphlets.
- Electronic media-radio, television, video, computer based technologies.
- Outdoor media; exhibition, fairs and kiosks.
- Media planning and scheduling, selection of media on the basis of suitability, reach, impact, frequency and cost.
- Introduction to ethics in mass media, freedom of speech, expression and social responsibility.
- Political and Government controls on the media.

3. Advertising
- Definition, concept and role of advertising in modern marketing system and national economy.
- Inter-relation of advertising and mass media systems.
- Types of advertisements-commercial, non-commercial, primary demand, selective demand, classified and display advertising, comparative and co-operative advertising.
- Techniques of preparation of effective advertisements for various media.
- Ethics in advertising.

4. Computer Graphic Designing
- Introduction to Basics of Computers.
- Concepts of multimedia.
- Multimedia Applications.
- Advantages of Digital Multimedia.
- Multimedia System.
- Animation and Graphics using 3D Studio or such other packages.
- Introduction to Graphics.
- Drawing objects, shaping, transforming, stretching, mirror and scaling, making curves, lines rectangles, circles and ellipses. Creating special effects, adding perspective to an object, editing it, extruding an object and using blends.
- Introduction to Scanning.
- Scanning and developing Color Ways-Basic.
- Introduction to Animation using 3D Studio, Key framing and motion control.
- Basics of 3D modeling, transition from 2D space to 3D space.
- 3D shaping and rendering.
- International media - email, internet, teleconferencing, video conferencing video display, CD ROM writer, Microphone, LCD Projector, video disc technology, virtual reality.

Practicals

1. Designing a visual composition-book cover, or Folder with the help of computers.
2. Evaluation of advertising, a newspaper story, a radio programme and a television broadcast.
3. Planning, development and evaluation of Communication strategies and techniques for selected traditional, print electronic and outdoor media systems.
4. Preparing effective advertisements keeping in Consideration headlines, illustration, slogan, logo, seal of approval and color effectiveness with the help of computer.
5. Individual Project on 3D Studio max. (animation).

Reference

DEVELOPMENT JOURNALISM

Code: 51115
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Theory

Objectives

- To understand ‘development journalism’ in the context of India’s development status.
- To understand approaches, issues, problems and perspectives for development journalism in India.
- To understand the problems faced by development journalism professionals in different media.
- To understand the relevance and advocacy to promote development journalism.
- To analyse the existing policy on different media to address problems of development journalism.

Contents

   - Need for development journalism, social-economic and cultural contexts of India.
   - Issues and problems for media professionals
   - Global scenario of development journalism in Asia, Europe, America.

2. Development Journalism: Perspective and Approaches
   - Development issues faced by India: need for clear understanding of problems, inter-linkages and holistic perspective.
   - Role of development journalism in furthering the appropriate perspective and the challenges.
   - Approaches to development journalism: short term and long term, isolated, integrated, sensational and others.
   - Case studies
4. **Development Journalism in Print Media**
   - Status of development journalism in national and regional dailies, magazines and journals.
   - Challenges ahead
   - Print media policy with respect to space and quality of reporting for development journalism.
   - Photo journalism and written journalism – principles, techniques for enhancement.
   - Media research and development journalism.
   - Problems of print media professionals in development journalism and role of advocacy.

4. **Development Journalism in Radio and TV**
   - Policy perspectives
   - Available spaces, time, value and cost.
   - Advocacy to promote value for development journalism
   - Changing trends in development journalism on Radio and TV as a result of media liberalisation and globalisation
   - Case studies: Global, national and regional perspectives

5. **Video for Development**
   - Project design for video journalism
   - Policy perspectives
   - Challenges ahead – technical, space, financial, others
   - Successful experiments like SEWA video, etc.

6. **Cyber Journalism**
   - Relevance, scope, reach
   - Web designing techniques
   - Challenges of content, presentation, reach, economics, others
   - Policy perspectives
   - Challenges ahead
   - Global and national perspectives to cyber journalism

**Practicals**

**Objectives**

1. To produce development journalism materials for different media:
   - Newspapers
- Magazines and journals
- Radio
- TV
- Video
- Web sites.

2. To integrate the study of issues, problems, approaches and perspectives into each of the projects initiated above for different media.

3. To analyse the policy of each media towards development journalism.

References

Periodicals
1. A&M: Journal of Advertising and Marketing
4. Media Asia.
5. Social Change.
MEDIA PLANNING & SOCIAL ADVERTISING

Code: 51116  
Credits: T 3 P 1  
Periods/week: 5  
Marks: 100

Objectives

- To understand the process of social marketing and social advertising and its comparison with commercial and marketing of products and services.
- To understand the theories, modes and approaches to social marketing.
- To identify the steps and considerations involved in media planning for different target groups, media types and issues types.
- To analyse the policy framework of different mass media with respect to social marketing and advertising.
- To understand the role of each media type: small and large group media; in promoting social advertising.
- To study the trends, needs and problems with respect to social advertising on different media types: mass media and small and large group media.

Contents

1. Social Marketing and Advertising
   - Social advertising and commercial advertising - definitions, need, scope.
   - Understanding marketing and social marketing: 3P, 4P and 5P models, terms of social marketing and social advertising.
   - Similarities and differences between commercial marketing of products and services and social marketing.
   - Approaches to social advertising and marketing.
   - Social advertising as developmental communication model.

2. Media Planning for Social Advertising & Marketing
   - Programme design for social advertising
Communications and steps in media planning for different target groups, types of issues, choice of media available, communication needs, finance and time considerations, socio cultural factors and others; choice of media mix.
- Consideration and steps in message design, treatment and presentation for different types of issues and target groups.
- Measuring communication effectiveness: Media research in social advertising, effectiveness, trends and needs.

3. **Issues in Social Marketing & Advertising**
   - Variety of issues and problems to be addressed through social marketing and advertising - social, economic, cultural, ecological, human resource development and management, legal, organisational, infrastructure and others.
   - Approaches to marketing the issues and problems to different target groups, linear, inter dependency, diffusions, participatory, integrated etc.

4. **Media in Social Marketing & Advertising: Global and Indian Perspective**
   - Role of small and large group media in social advertising - economic, technical and time consideration, availability, repeat value, exposure, adaptability and others.
   - Economic aspects of media for social advertising.
   - Critical assessment of each mass media for different campaign types for different target groups in social marketing.
   - Layout policy on each mass media with respect to social advertising.

5. **Trends in Social Advertising: Global & Indian Scenario**
   - Analysis of trends in social advertising on different media types for different issues - message type, treatment, presentation, media mix, repeat value of messages.
   - Problems and future needs in social advertising on different media types.
   - Social advertising research.

**Practicals**

**Contents**

1. Collect samples of social and commercial advertisements across different media and study the differences and similarities in terms of strategy, appeal, content, presentation, treatment and media case.
2. Study the media use pattern of some of the ongoing social ad campaigns for different target groups - choice of campaigns can be social, economic, cultural, ecological, etc.
3. Study the trends in social advertising on different mass media - Print, TV, Radio, Video,
Internet in terms of issues covered, repeat value, content, presentation, target group addressed etc.

4. Study people’s perceptions of trends, impact and need for social advertising on different media for different communities – rural, urban, slum.

5. Evaluate the policy of each mass media with regard to family structure, timing, slotting, positioning of social ads.

References


MEDIA PRODUCTION

Code: 51117
Credits: T 1 P 3
Periods/week: 7
Marks: 100

Objectives:
- To enable the students to: understand the role of media in communication process.
- Understand the process of making audio-visual materials
- Develop ability in producing various media materials.

Contents

1: Theories, types and Role of Media
   - Theories and models of mass communication.
   - Role of media in Communication process
   - Various types of media for communication
   - Various constraints in the use of media
   - Criteria in selection and use of various media

Practicals

1. Operations of various Audio-visual Aids
   - OHP
   - Slide projector
   - Filmstrip
   - Film projector
   - LCD projector
   - Epidioscope
   - Tape recorder
   - Video recorder
   - Disc recorder
   - Screen
2. **Preparation of Visual/Non projected materials**
   - Booklets
   - Pamphlets/leaflet
   - Invitation
   - Posters
   - Manuals
   - Cover pages for text and other books

3. **Projected Materials**
   A. Photography: its basic principles,
      - Preplanning scripting, shooting, developing, mounting, recording of commentary or dialogue, synchronization of frame with recording.
   B. Video films
      - Essential preliminaries - preplanning
      - Procedure of- from idea to shooting script
      - Production consideration
      - Editing procedures
      - Optical effects, music titles and other accessories to be added

4. **Recording Processes**
   - Home Videos
   - Radio recording

**References:**

MANAGEMENT OF HUMAN SERVICE ORGANISATIONS

Code: 51118
Credits: T 2 P 2
Periods/week: 6
Marks: 100

Elective

Objectives:
To enable the students to:

- Understand the concept of human service.
- Become aware of the human service organisations.
- To understand and apply the principles of management of human service organisations.

Contents:
1. Concept of Service Organisations
   - Need and nature of service organisations in India
   - Philosophy and significance in a developing nation.

2. Management of service organisations
   - Concept and importance, functions of management, approaches to management
   - Planning, implementation, personnel management, financial management, administration and monitoring of organisational activities
   - Managerial skills.

3. Organisational structure of Human Service Organisations.

4. Organisations working for the service of various group: Women, children, youth, groups and groups with special needs.
   - Government and Non-Government working for the service of:
     - Women: like National Commission for Women, SEWA, Mahila Samakhya, Central Social Welfare Board, Bhartiya Gramin Mahila Sangh etc.
- Youth: Nehru Yuvak Kendra, YMCA, YWCA, YUVA etc.
- Groups with special needs: Physically and mentally handicapped, aged, destitute, orphans street children like National Association for Blind, Spastic Society, Help-age India, SOS villages, Dignity Foundation etc.

5. Assessment of Human Service Organisations-
   - Indicators of assessment
   - Assessment of personal accountability

6. Concept of Volunteerism
   - Theories of Volunteerism
   - Profile of Volunteers
   - Motivation of Volunteers

Practicals
   - Identifying and visiting local human service organisations
   - Discussion of case studies
   - Outline of organisational structure of a selected organisation

Reference
MEDIA RESEARCH & EVALUATION

Code: 51119
Credits: T 1 P 2
Periods/Week: 6
Marks: 75

Objectives

- To understand the need and scope of media research.
- To understand the role of media in influencing people's lives.
- To understand the different types of communication research and the applicability of different media types; for small and large group and mass media.
- To understand the tools and techniques involved in conducting media research and the choice of tools and techniques based on media research type.
- To create awareness about media research organisations and their role in influencing policies and programmes on different media.

Contents

1. Media Research: need, rationale, scope, approaches.
   - Functions of media and process of communication, message design for different types of media: small and large group and mass media.

2. Communication Research: Types of communication research, need and applications of each type of research.
   - Need assessment research: Communication need assessment of different communities/target groups in terms of content, treatment, presentation and media choice, KAP studies.
   - Tools and techniques involved in conducting need assessment researches.
   - Project/programme design research: objectives, content, treatment, presentation, media mix choices, built-in methods of evaluation of programme design research.
   - Formative, process and summative research.
     - Tools, techniques, methodologies involved in programme design researches.
     - Audience research approaches.
- Media planning and strategy design research:
  - Steps involved in media planning and strategy design research.
  - Applications of above research in development and commercial sectors.
  - Considerations to be kept in mind for media planning and strategy design - budget, target groups, TRP ratings, expenses, repeat value of messages etc.
  - Relevance for different media types.
  - Participatory media planning.
  - Case Studies.

- **Evaluation Research**: need, scope and relevance; role in influencing programme design and policy for different media types.
  - Evaluation: Based on programme design objectives; based on people's perception.
  - Tools, techniques, methodologies
  - Indices to evaluation, levels of evaluation.
  - Implications for different media types.
  - Case studies from different media

- **Impact research**: Need, relevance, nature and scope.
  - Indices to conduct 'impact researches', types and relevance.
  - Tools, techniques, methodologies
  - Applications for different media types, programmes and policy.
  - Case studies.

3. **Tools, techniques and methodologies in media research**:
   - Tools, techniques, methodologies - direct, indirect, participatory.
   - Case studies, content analysis, semiology, surveys etc.

4. **Implications on media research**
   - Policy and programme implications of media research - global, national and regional scenario.
   - Role of media advocacy.

**Practicals**

1. **Developing Research Proposal**
2. **Need Assessment Research**
   - Analyse the methodologies, tools and techniques of existing need assessment researches.
   - Design projects to conduct need assessment researches in terms of content, treatment, presentation and media strategy design for a) different media types
   - b) different target groups in different communities
   - Analyse the findings and media presentations.

3. **Programme Design Research**
   - Analyse existing case studies in programme design researches for different media types in terms of tools, techniques, methodologies.
   - Design and implement projects in programme design researches for different media types and target groups.
   - Assess the effectiveness of the above through built-in mechanisms of evaluations.

4. **Media Planning & Strategy Design**
   - Analyse the media mix of existing campaigns.
   - Design projects with media mix decisions (different combinations) for different media types and target groups.
   - Study the effectiveness of each media mix decision.

5. **Evaluation Research**
   - Analyse the existing evaluation researches applicable to different media types, communities and issues.
   - Design projects for evaluation and implement research for different issues, communities, target groups and media types.
   - Analyse the findings and draw recommendations for policy and programme level.

6. **Impact Researches**
   - Analyse the existing case studies of impact research in terms of tools, techniques, methodologies, indications.
   - Design and implement projects for impact researches applicable to different issues, media types and communities.
   - Collect data on a small scale and analyse the same for recommendations at policy and programme level.

7. **To launch a media advocacy campaign and study its effectiveness**
References

FOOD AND NUTRITION

The specialists in Food and Nutrition play a vital role in promoting the quality of life of individuals and communities, which contributes significantly to the economic and overall development of the nation. This is achieved through a blend of academics, research training and extension as well as industrial applications. The post graduate programme in this discipline has been designed to provide the students intensive and extensive theoretical and experiential learning. The programme allows flexibility in the choice of thrust areas, which students can select, based on their career goals. It is envisaged that the current scenario at the regional and national level require trained professionals in areas such as Public Nutrition, Dietetics and Clinical Nutrition, Institutional Food Administration as well as Food Science and Quality Control. Alternatively a broad-based programme covering several varied aspects in this discipline is also possible.

Objectives

The curriculum integrating several elective courses, besides the core, has been formulated to provide professionally competent manpower for:

i. Academic and research institutions.
ii. Hospitals, food service institutions and industry.
iii. Managerial roles in agencies and institutions – both government and NGO sector.
iv. Planning, monitoring and evaluation of nutrition and health programmes.
v. Training and IEC activities of regional and national programmes.
vi. Ensuring food safety and quality for consumers.
vii. Entrepreneurial ventures.
viii. Advocacy and consultancy.

Eligibility

- All students admitted to the programme should have science background.
- The candidates should have completed 10+2+3 with Food and Nutrition/Food Technology or Composite/General Home Science at B.Sc. level.
# LIST OF COURSES

## CORE COURSES

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## ELECTIVE COURSES

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M.SC. FOOD AND NUTRITION

**SCHEME OF INSTRUCTION**

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Note: Strongly recommended as basic courses for the following thrust areas:

$ Public Nutrition

# Dietetics/IFA

@ Food Science

* Compulsory
ELECTIVES

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A total of 60 credits have to be taken by the students to complete the programme. If the number of credits exceeds 60, it is permissible, but the calculation of the grade point average will be done on the basis of 60 credits only. Internship is an integral part of the programme of study, but does not carry any credit. This can be arranged during the course of study or after the completion of the programme. It can be arranged in one single assignment or two. A minimum of 6 weeks should be provided for internship for each student under staff supervision.
RESEARCH METHODS AND STATISTICS

Code: 40101
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives:
- To understand the significance of statistics and research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- To understand and apply the appropriate statistical technique for the measurement scale and design.

Contents:
1. **Science, scientific methods, scientific approach.**
2. **Role of statistics and research in Home Science discipline.**
   Objectives of research: Explanation, control and prediction.
3. **Types of Research**: Historical, descriptive, experimental, case study, social research, participatory research.
4. **Definition and Identification of a Research Problem**
   - Selection of research problem
   - Justification
   - Theory, hypothesis, basic assumptions, limitations and delimitations of the problem.
5. **Types of variables**
6. **Theory of probability**
   - Population and sample
- Probability sampling: simple random, systematic random sampling, two stages and multi stage sampling, cluster sampling.
- Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling.

7. **Basic principles of Research Design**
   - purposes of research design: Fundamental, applied and action, exploratory and descriptive, experimental, survey and case study, ex-post facto,
   - longitudinal and cross sectional, co-relational

8. **Qualitative Research Methods:**
   - Theory and design in qualitative research
   - Definition and types of qualitative research
   - Methods and techniques of data collection
     - group discussions
     - interviews: Key informants, in-depth interviews
     - observations
     - social mapping
     - participatory rapid assessment
     - participatory learning assessment

9. **Data Gathering Instruments:**
   - Observation, questionnaire, interview, scaling methods, case study, home visits, reliability and validity of measuring instruments

10. **Scales of measurement and the appropriate statistical techniques.**

11. **Critical analysis of research.**

12. **Writing a research proposal.**

13. **Analysis of data and research report.**

**References**
APPLIED PHYSIOLOGY

Code: 42101
Credits: T 2 P 0
Pd/wk: 2
Marks: 50

Objectives

This course will enable students to:

- Advance their understanding of some of the relevant issues and topics of human physiology.
- Enable the students to understand the integrated function of all systems and the grounding of nutritional science in Physiology.
- Understand alterations of structure and function in various organs and systems in disease conditions.

Contents

1. Cell structure and function
   Levels of cellular organisation and function- organelles, tissues, organs and systems
   - Brief review. Cell membrane, transport across cell membrane and intercellular communication. Regulation of cell multiplication

2. Nervous system
   - Review of structure and function of neuron, conduction of nerve impulse, synapses, role of neurotransmitters.
   - Organisation of central nervous system, structure and function of Brain and spinal cord, Afferent and efferent nerves, Blood Brain Barrier, CSF. Hypothalamus and its role in various body functions-obesity, sleep, memory.

3. Endocrine system
4. **Sense organs**
   - Review of structure and function. Role of skin, eye, ear, nose and tongue in perception of stimuli.

5. **Digestive system**
   - Review of structure and function. Secretory, Digestive and Absorptive functions, Role of liver, pancreas and gall bladder and their dysfunction. Motility and hormones of GIT.

6. **Respiratory system**

7. **The circulatory system**
   - Structure and function of heart and blood vessels. Regulation of cardiac output and blood pressure, heart failure, hypertension.


9. **The excretory system**
   - Structure and function of nephron. Urine formation. Role of kidney in maintaining pH of blood.
   - Water, electrolyte and acid base balance, diuretics

10. **The Musculo - skeletal system**
    - Structure and function of bone, cartilage and connective tissue. Disorders of the skeletal system.
    - Types of muscles, structure and function.

11. **Immune system**
    - Cell mediated and humoral immunity. Activation of WBC and production of antibodies. Role in inflammation and defence.
12. **Reproduction**
   - Menstrual cycle, spermatogenesis, physiological changes in pregnancy.

**References**

ADVANCED NUTRITIONAL BIOCHEMISTRY

Code: 42102
Credits: T 3 P 2
Periods/week: 7
Marks: 125

Objectives

This course will enable the students to:

- Augment the biochemistry knowledge acquired at the undergraduate level
- Understand the mechanisms adopted by the human body for regulation of metabolic pathways
- Get an insight into interrelationships between various metabolic pathways
- Become proficient for specialization in nutrition.
- Understand integration of cellular level metabolic events to nutritional disorders and imbalances.

Contents

1. Heteropolysaccharides: Definition, classification, structure and properties of glycoproteins and proteoglycans.
3. Overview of regulation of intermediary metabolism: Equilibrium and non-equilibrium reactions, committed steps, allostERIC modifications, covalent modulation, hormonal induction and repression, cross-over theorem, starve-feed cycle, caloric homeostasis and futile cycles.
4. Intermediary metabolism: Reactions, standard free energy changes and regulation.
   - Carbohydrates- glycolysis, gluconeogenesis, citric acid cycle, hexose monophosphate pathway.
   - Lipids, beta–oxidation, de novo synthesis of fatty acids, synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids and triacylglycerol.
5. Purines and pyrimidines – Synthesis and breakdown.
8. **Minerals** – Biological role of trace elements.
9. **Detoxification in the body** – Metabolism of foreign compounds
10. **Major alterations in carbohydrates, protein and fat metabolism in chronic nutrition-related degenerative diseases.**

**Practical**

**Objectives**

This course will enable the students to:
- Understand the principles of biochemical methods used for analysis of food and biological samples.
- Perform biochemical analysis with accuracy and reproducibility.

1. **Calcium:** Estimation of calcium in foods and serum.
2. **Phosphorus:** Estimation of inorganic phosphorus in foods and serum.
3. **Ascorbic acid:** Estimation of ascorbic acid in foods.
4. **Proteins:**
   b. Estimation of albumin, globulin and albumin/globulin ratio in serum and urine.
   c. Estimation of hemoglobin
5. **Glucose:** Estimation of glucose in blood and urine.
6. **Cholesterol:** Estimation of cholesterol in blood.
7. **Enzyme assay:** Estimation of activity of serum alkaline phosphatase and transaminase
8. **Urea and Creatinine:** Estimation of urea and creatinine in serum and urine.
9. **Survey of pathological laboratories:** To obtain information about the methods used for blood/serum analysis.
References

   Worth Publishers.
   Worth Publishers.
   and Sons.
   Books Ltd.
    and Longman.
    NIN. ICMR.
METHODS OF INVESTIGATION

Code: 42103
Credits: T 1 P 2
Periods/Week: 5
Marks: 75

Objectives

This course will enable the students to:

- To understand the principles of various analytical techniques available for nutrition research.
- To familiarize with the applications of the above techniques.

Contents

1. **Electrolytic dissociation** – Acids, bases, salts, buffers, Hendersen-Hasselbach equation.
   Theory of indicators and principles of measurement of pH.
2. **Basics of Instrumentation** – Physico-chemical principles and methodology – Colorimetry, photometry, fluorimetry, flame photometry and atomic absorptiometry.
3. **Chromatography** – principles and application in paper (circular, ascending and descending), ion-exchange, column, thin layer, gas liquid and high performance liquid chromatographic techniques.
4. **Electrophoresis** – Principle and applications in paper and gel electrophoresis.
5. **Bioassays** – Animal studies, Human Studies, Microbiological assays.
7. **NMR and its applications.**
8. **Immunological Methods** – RIA, ELISA.
Practicals

Objectives

This course will enable the students to:

1. Orient themselves regarding the use of various analytical techniques for specific estimations.
2. Comprehend better the principles involved in different methods of investigation.
3. Become efficient in the use of some of the most commonly used techniques and instruments in high quality research.

1. Acid and Alkalis: Preparation of dilute solutions of common acids and alkalis and determining their exact normalities.
2. Buffers: Preparation of phosphate, carbonate-bicarbonate, boric acid, acetate, chloride and phthalate buffers and determination of their pH by the use of indicators and pH meters.

5. Electrophoresis: Fractionation of plasma proteins.

References


ADVANCES IN FOOD MICROBIOLOGY

Code: 42104
Credits: T 2 P 2
Periods/week: 6
Marks: 100

Objective

This course will enable the student to:

- Gain deeper knowledge of role of micro-organisms in humans and environment.
- Understand the importance of micro-organisms in food spoilage and to learn advanced, techniques used in food preservation.
- Understand the latest procedures adopted in various food operations to prevent food-borne disorders and legal aspects involved in these areas.

Contents

1. Introduction to historical developments in food preservation, spoilage, infections and legislation.
2. Micro-organisms of importance in food: Their primary sources in foods, morphology, cultural characteristics and biochemical activities.
3. Factors affecting the growth of microorganisms in food. Intrinsic and Extrinsic parameters that affect microbial growth.
4. Methods of isolation and detection of microorganisms or their products in food.
   - Conventional methods
   - Rapid methods (Newer techniques)
   - Immunological methods: Fluorescent, antibody, Radio immunoassay, ELISA etc.
   - Chemical methods: Thermostable nuclear, ATP measurement and PCR (Polymers chain reactions) - only principles in brief.
5. Spoilage of different groups of foods: Cereal and cereal products, vegetables & fruits, meat & meat products, eggs and poultry, fish and other sea foods, milk and milk products, canned food.
Chemical preservatives and Natural antimicrobial compounds. Biologically based preservation systems and Probiotic bacteria.

7. **Food borne diseases**: Bacterial, and viral food-borne disorders, Food-borne important animal parasites, Mycotoxins.

8. **Indicators of food safety and quality**: Microbiological criteria of foods and their significance.

9. **The H A C C P system and food safety used in controlling microbiological hazards.**

10. **Role of microbes in fermented foods and genetically modified foods.**

**Practicals**

1. **Preparation of common laboratory media and special media** for cultivation of bacteria, yeast & molds.

2. **Staining of Bacteria**: Gram’s staining, acid-fast, spore, capsule and flagellar staining, Motility of bacteria, Staining of yeast and molds.

3. **Cultivation and Identification of important molds and yeast**. (slides and mold culture).

4. **Study of environment around us as sources of transmission of microorganisms in foods**. Assessment of surface sanitation of food ‘preparation units’ swab and rinse techniques.

5. **Isolation of microorganisms**: Different methods and maintenance of cultures of microorganisms.

6. **Bacteriological analysis of Foods**: Both processed and unprocessed like vegetables and fruits, cereals, spices and canned foods, using conventional methods, yeast and mold count in foods.

7. **Bacteriological analysis of water and milk**, Total count, MPN Coliform (Count) and MBRT, IMVIC etc.

8. **To perform various biochemical tests used in identification** of commonly found bacteria in foods: IMVIC urease, \( \text{H}_2\text{S} \), Catalase, coagulase, gelatin and fermentation (Acid/gas)

9. **Demonstration of available rapid methods and diagnostic kits used in identification of microorganisms or their products.**

10. **Visits (at least two) to food processing unit or any other organization dealing with advanced methods in food microbiology.**

**References**


Journals

14. Journal of Food Science Published by the Institute of Food Technologists, Chicago Ilu. U.S.A.

15. Journal of Food Science and Technology published by Association of Food Scientists and Technologists (India) CFTRI – MYSORE.

16. Food Technology published by the Institute of Food Technologists, Chicago Ilu. U.S.A.
STATISTICS & COMPUTER APPLICATIONS

Code: 40102
Credits: T 2 P 1
Periods/Week: 4
Marks: 75

Objectives

- To understand the role of statistics and computer applications in research
- To apply statistical techniques to research data for analysing and interpreting data meaningfully.

Note: Students should be given hands-on experiences to use appropriate software packages for selected statistical analyses.

Contents

1. Conceptual understanding of statistical measures. Classification and tabulation of data. **Measurement of central tendency, measures of variation**
2. Frequency distribution, histogram, frequency, polygons, Ogive.
3. Binomial distribution
4. Normal distribution – Use of normal probability tables
5. Parametric and non-parametric tests.
6. Testing of hypothesis. Type I and Type II errors. Levels of significance
7. Chi-square test. Goodness of fit. Independence of attributes 2 x 2 and r x c contingency tables.
9. Correlation, coefficient of correlation, rank correlation
10. Regression and prediction
12. Experimental Designs
   - completely randomized design
   - randomized block design
   - Latin square design
- factorial design
- trend analysis

References
2. Edwards: Experimental Design in Psychological Research.
4. SPSS/PC for the IBM PC/XT, SPSS Inc.
RESEARCH METHODS IN FOODS AND NUTRITION

Code: 42105
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Objectives

This course is designed to:

- Understand the scientific approaches used in accumulating knowledge in the field.
- Understand the various designs used vis-à-vis the research problem.
- Be able to identify sources of variability and uncertainty in research in this field.

Contents

I. Quantitative and Qualitative Research in Foods and Nutrition – an overview

II. Quantitative Research

1. Design Strategies in Research – Descriptive Studies
   Brief overview of types of descriptive studies
   - correlational studies (Populations/individuals)
   - case reports and case studies
   - cross sectional surveys
   Use of descriptive studies in research
   Hypothesis formulation from descriptive studies
   Issues in the design and conduct of descriptive studies

2. Design Strategies in Research – Analytic Studies I
   Analytic studies
   - Observational studies
   - Case-control studies
   - Cohort studies – retrospective and prospective
   - Intervention trials (Clinical trials)
   Use of analytic studies
   Issues in the design and conduct of case control studies, definition and selection of cases,
selection of control, ascertainment of disease and exposure status
Issues in Analysis and Interpretation of case-control studies

3. Design Strategies in Research – Analytic Studies II
   - Overview of types of Cohort studies and Intervention Studies
   - Issues in the design of Cohort studies (selection of the exposed population, selection
     of comparison groups, sources of data, sources of exposure information, sources of
     outcome data)
   - Issues in the design and conduct of clinical trials (selection of study population,
     allocation of study regimens, maintenance and assessment of compliance, issues of
     factorial design, sample size considerations: statistical power etc.)
   - Issues in Analysis and Interpretation of Cohort studies (role of bias, effect of loss to
     follow-up effect of nonparticipation)
   - Strengths and limitations of intervention studies
   - Unique problems of intervention studies
   - Issues in analysis and interpretation of clinical and community trials

III. Qualitative Research in Foods and Nutrition
   - Types of qualitative research
   - Tools, techniques and methodologies
   - RRA, PRA, PLA
   - Data Analysis and Interpretation
   - Rapid Assessment Procedures: Use of rapid assessment procedures for Nutrition
     programme planning, design, training, assessment
   - Project reorientation and evaluation

IV. Summarizing Data, Analyzing Trend data
V. Application of non-parametric tests
VI. Introduction to meta-analysis
VII. Study design issues, sample size and power
VIII. Criteria for evaluation of research problem/programme
IX. Ethics in research

References
   Planning and Evaluation of Health-related Programmes. International Nutrition Foundation for Developing
   Countries, Boston.
ADVANCED NUTRITION

Code: 42106  
Credits: T 4 P 1  
Periods/week: 6  
Marks: 125

Objectives

This course is designed to:

- Provide in-depth knowledge of the physiological and metabolic role of various nutrients and their interactions in human nutrition.
- Enable students to understand the basis of human nutritional requirements and recommendations through the life cycle.
- Enable students to understand the pharmacological actions of nutrients and their implications.
- Familiarise students with the recent advances in nutrition.

Contents


5. **Water:** Regulation of intra and extra cellular volume. Osmolality, water balance and its regulation.

6. **Minerals:** (Note: For each nutrient sources, bioavailability, metabolism, function, requirements, RDI/ESADDI, deficiency and toxicity, interactions with other nutrients are to be discussed).
   
   *Macro minerals*: calcium, phosphorus, magnesium, sorium, potassium and chloride.
   
   *Micro minerals*: Iron, copper, zinc, maganese, iodine, fluoride.
   
   *Trace minerals*: Selenium, cobalt, chromium, vanadium, silicon, boron, nickel.

7. **Vitamins:** Historical background, structure, food sources, absorption and transport, metabolism, biochemical function, assessment of status. Interactions with other nutrients. Physiological, pharmacological and therapeutic effects, toxicity and deficiency with respect to the following:
   
   a) **Fat soluble**: Vitamins A, D, E & K.
   
   b) **Water soluble**: Thiamine, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, ascorbic acid, cyanocobalamin, choline, inositol.

8. **Non-nutritive food components with potential health effects:** Polyphenols, tannins, phytate, phytoestrogens, cyanogenic compounds, lectins and saponins.

9. **Nutritional regulation of gene expression.**

10. **Nutrition management in special conditions:** Space travel, high altitudes, low temperatures, submarines.

**Practicals**

**Objectives**

The aim of the course is to:

1. Familiarize students with basic techniques used in Studies and Research in Nutritional Sciences

2. Acquaint students with the methods of estimating nutrient requirements.

3. Orient students towards planning of metabolic studies.

**Contents**

1. Estimation of Protein Quality using different methods PER, B.V, N.P.U. NDP-Cal %.

2. Estimation of energy value of foodstuffs using bomb calorimeter.

3. Estimation of Energy Requirements:
   
   - BMR
   
   - Energy expenditure on physical activities
   
   - Factorial approach
4. Balance Studies
   a. Nitrogen balance
5. Assessment of micronutrient status:
   a. Iron
   b. Vitamin C
   c. Vitamin A
   d. Vitamins from B-complex group
6. Bioavailability of selected nutrients

References
1. Annual Reviews of Nutrition. Annual Review Inc, California, USA.
4. World Reviews of Nutrition and Dietetics.

Journals
1. Nutrition Reviews
2. Journal of Nutrition
3. American Journal of Clinical Nutrition
4. British Journal of Nutrition
5. European Journal of Clinical Nutrition
6. International Journal of Vitamin and Nutrition Research
7. International Journal of Food Science and Nutrition
8. Nutrition Research
9. Ann Nutr Metab
FOOD SCIENCE

Code: 42107
Credits: T 3 P 2
Periods/week: 7
Marks: 150

Objectives
This course is designed to:

- Provide an understanding of composition of various foodstuffs
- Familiarise students with changes occurring in various foodstuffs as a result of processing and cooking.
- Enable students to use the theoretical knowledge in various applications and food preparations.

Contents

1. **Introduction to Food Science:** Evolution of the Food Industry and Allied Industries. Development of Food Science as a discipline.
2. **Constituents of Foods:** Properties and significance
3. **Water and Food Dispersions:** Physical properties of water and ice, chemical nature, structure of the water molecule.
   - Sorption phenomena, types of water, solutions and colligative properties.
   - Free and bound water
   - Water activity and Food spoilage
   - Freezing and Ice structure
   - Colloidal salts, stabilization of colloidal systems, Rheology of food dispersions
   - Gels: Structure, formation, strength, types and permanence.
   - Emulsions: Formation, stability, surfactants and emulsifiers.
   - Foams: Structure, formation and stabilization.
4. **Polysaccharides, Sugars and Sweeteners**
- Non-starch Polysaccharides: Cellulose, hemicelluloses, pectins, gums, animal polysaccharides.
- Sugars and Sweeteners: Sugars, syrups, sugar alcohols, potent sweeteners, sugar products.
- Sweetener chemistry related to usage in food products: Structural relationships to sweetness perceptions, hydrolytic reactions, solubility and crystallization, hygroscopicity, colligative properties, textural contributions, fermentation, non-enzymatic browning.

5. **Cereals and Cereal Products**
   - Cereal grains: Structure and Composition
   - Cereal products:
     - Flours and flour quality
     - Extruded foods, breakfast cereals, wheat germ, bulgar, puffed and flaked cereals.

6. **Fats, Oils and Related Products**

7. **Proteins**: Classification, composition, denaturation, non-enzymatic browning, and other chemical changes.


   Dairy products: Cultured milk, yogurt, butter, whey, cheese, concentrated and dried products, frozen desserts, dairy product substitutes.


12. **Fish and Sea Food**: Types and Composition, Storage and changes during storage. Changes during processing. By-products and newer products.


14. **Nuts and Oilseeds**: Composition, Oil extraction and by-products.

15. **Protein Concentrates, hydrolysates and textured vegetable proteins, milk substitutes.**

16. **Fruits and Vegetables**: Plant anatomy, gross composition, structural features and activities of living systems. Enzymes in fruits and vegetables. Flavour constituents. Plant

17. **Spices and Condiments**: Composition, flavouring extracts – natural and synthetic.
   Beverages: Synthetic and natural, alcoholic and non-alcoholic, carbonated and non-carbonated, coffee, tea, cocoa. Malted drinks.
   Confectioneries and chocolate products, bakery products, dehydrated products.
21. **Salt and substitutes**.

**Practicals**

1. Effect of solutes on boiling point and freezing point of water
2. Effect of types of water on characteristics of cooked vegetables, pulses and cereals.
3. **Sugar and Jaggery Cookery**: Relative sweetness, solubility and sizes of sugars, stages of sugar cookery, caramelization, crystallization, factors affecting crystal formation.
5. **Jams and Jellies**: Pectin content of fruits, role of acid, pectin and sugar in jam and jelly formation. Use of gums as emulsifiers/stabilizers.
7. **Milk and Milk Products**: Scalding, denaturation. Effect of acid, salt, alkali, sugar, heat, enzymes, polyphenols on milk. Khoa, curd, paneer, cheese (ripened and unripened).
9. **Pulses**: Effect of various cooking and processing methods on various characteristics, functional properties of pulses and their products.
10. **Meat and Poultry**: Methods affecting tenderness of meat, effect of various methods of cooking and ingredients on colour, volume, texture, flavour, aroma and water holding capacity.
11. **Fish and Sea Food**: Effects of different cooking methods on various fish and sea foods.
12. **Gelatin**: Gelation, gel strength and factors affecting gelation. Ability to foam.

14. **Leavened Products**: Fermentation – Use of micro organisms (lactic acid, yeast), steam as an agent, egg as an agent, chemical agents.

15. **Beverages**: Factors affecting quality of beverages.


References


Journals

1. Journal of Food Science

2. Advances in Food Research

3. Journal of Food Science and Technology

4. Journal of Agricultural and Food Chemistry

5. Cereal Science

6. Journal of Dairy Science

7. Journal of the Oil Chemists' Society
FOOD PACKAGING

Code: 42108
Credits: T 2 P 0
Periods/Week: 2
Marks : 50

Elective

Objectives

This course is designed to enable students to:

- Gain knowledge about various packaging materials and importance of packaging.
- Be familiar with testing and evaluation of packing media.
- Be familiar with packaging laws and regulations.
- Be able to select appropriate packaging material for a variety of foodstuffs vis-à-vis the need for preventing environment degradation.

Contents

1. Packaging - Concepts, Definition, Significance, Classification.
2. Packaging – Development, Unit/Retail
3. Packaging of food(s)- Fresh and processed, general characteristics & food preservation.
4. Primary Packaging Media – Properties and applications
   a. Paper boards, metals, plastics, wood & plywood, glass, flexible etc.
   b. Labels, caps & closures & wads, adhesives, inks & lacquers, cushioning materials, reinforcements etc.
5. Testing & evaluation of packing media – retail packs (including shelf life evaluation) and transport packages.
6. Packaging systems and methods for food products – vacuum packaging, gas flush. packaging, CAP & MAP, Aseptic & retort packing, Bag-in Box etc.
7. Food products – General classification and packing types, varieties and trends.
8. Storage, handling and distribution of packages (foods) – including palletisation & Containerization
12. **Coding & marking including bar coding.**
13. **Environmental & Eco issues and waste disposal.**

**References**

1. Sacharow & Grifin, Food Packing –AVI Publications.
3. Stanley & Sacharow Food Packaging –.
7. Robertson G.L. Food Packaging –Mew York, Marcell Dekker, INC.
SENSORY EVALUATION

Code: 42109
Credits: T 1 P 1
Periods/week: 3
Marks: 50

Objectives

This course aims to:

- Provide adequate theoretical background and understanding about sensory evaluation of food.
- Enable students to use various sensory methods for evaluating variety of foods.
- Enable students to analyse and interpret sensory evaluation data.

Contents

1. Introduction to sensory analysis and uses of sensory tests.
3. General testing conditions.
4. Selection of test subjects and training of panel.
5. Types of tests:
   - Discrimination/difference test: Paired test, triangle test and duo-trio test; tests for multiple samples, difference from control/reference.
   - Threshold tests
   - Acceptance test: Monadic, paired and sequential monadic.
6. Descriptive analysis, concept alignment and selection of terms.
7. Designing of questionnaire and/or evaluation scorecard.
8. Experimental design and data analysis
9. Statistical applications and interpretations.
Practical

1. Establishing sensory panels: Selecting and recruiting panelists, orienting, screening for trained panels, training panelists, monitoring performance. Recognition tests for 4 basic tastes, odour and aroma. Tests with other senses. Threshold tests.
2. Analytical tests: (i) Difference, (ii) Ranking, (iii) Descriptive, (iv) Scoring and (v) Rating
3. Planning a Sensory Experiment: (i) Designing the questionnaire and score card, (ii) Identifying descriptors.
4. Designing Sensory Testing Facilities: Permanent and Temporary
5. Conducting the Test:
   - Preparing samples
   - Presenting samples
   - Using reference samples
   - Reducing panel response error
   - Consumer oriented tests
   - Product oriented tests
   - Shelf life studies
   - Product matching
   - Product mapping
   - Taint Investigation and Prevention
6. Collecting and analysing sensory data, statistical analysis, interpretations
7. Report Writing

References


PROBLEMS IN HUMAN NUTRITION

Code: 42110
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Objectives:
The course is aimed at providing an understanding of:
- Nutritional problems/ nutrition – related diseases prevalent among the affluent and the less privileged groups, with reference to their incidence, etiology and public health significance.
- Biochemical and clinical manifestations, preventive and therapeutic measures of the same.

Contents
1: Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for the following:
   - PEM
   - Vitamin A deficiency
   - Nutritional anemias
   - IDD
   - Rickets, osteomalacia and osteoporosis
   - Fluorosis
2: Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for
   - Obesity and overweight
   - Diabetes mellitus
   - CHD
   - Cancer

References
13. Publications of the International Life Science Institute
14. UNICEF's State of the World's Children
15. World Health Organisation's Reports, Monographs and Technical Report Series

Journals
1. World Review of Nutrition and Dietetics, Karger.
2. Annual Reviews of Nutrition, Palo Alto, California, USA.
5. UNU Food and Nutrition Bulletin
NUTRITION AND HEALTH OF WOMEN

Code: 42111
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Elective

Objectives:

This course aims to enable students to:

1. Be acquainted with status of women in family and society.
2. Understand how various factors influence the health and nutritional status of women.
3. Plan and undertake various activities to improve the status of women.
4. Understand how health of women influence family, community and national development.

Contents

1. **Role of Women in National Development.**
2. **Women in Family and Community**
   - Demographic changes, menarche, marriage, fertility, morbidity, mortality, life expectancy, sex ratio, aging and widowhood, female-headed families.
3. **Women and Work**
   - Environmental stress, production activities, nutrition, health and gender, living conditions, occupational health, health facilities.
4. **Women's nutritional requirements and food needs.**
5. **Women and Society**
   - Women's role, their resources and contribution to family and community and effect on nutritional status.
   - Effect of urbanisation on women.
   - Impact of economic policies, industrialization, and globalization on women.
6. **Women and Health**
   - Health facilities
   - Disease patterns and Reproductive health
   - Gender and health
   - Health seeking behaviour
   - Women - pregnancy and lactation
- Safe motherhood
- Care of at-risk mothers
- Family planning
- Women and aging – Special concerns in developed and developing societies: Menopause, osteoporosis, chronic degenerative diseases, neurological problems.
- Women and AIDS

7. **Women and Nutrition**
- Situation of women in global, national and local context. Improving the nutritional and health status. Interventions throughout the life cycle.

8. **Policies and Legislations**
- CEDAW (Convention on Elimination of all forms of Discrimination Against Women), Women’s Right to Life and Health (WRLH).

9. **Empowerment of Women**
- Role of Education and various national schemes.

References

1. ACC/SCN Policy Discussion Papers.
3. UNICEF (1994): The Urban Poor and Household Food Security, UNICEF.
6. Census Reports, Government of India.
7. NFHS Reports.
PUBLIC NUTRITION

Code: 52113
Credits: T 3 P 3
Periods/week: 9
Marks: 150

Elective

Objectives:

This course will enable the students to:

- Develop a holistic knowledge base and understanding of the nature of important nutrition problems and their prevention and control for the disadvantaged and upper socio-economic strata in society
- Understand the causes/determinants and consequences of nutrition problems in society
- Be familiar with various approaches to nutrition and health interventions, programmes and policies.

Contents

Theory

2. Sectors and Public Policies relevant to Nutrition.
3. Primary Health Care of the Community
   - National Health Care Delivery System.
   - Determinants of Health Status
   - Indicators of Health.
4. Population Dynamics
   - Demographic transition, population structure, fertility behaviour, population policy, fertility, nutrition and quality of life inter-relationship.
5. Food and Nutrition Security
6. **Nutritional Status**
   - Determinants of nutritional status of individual and populations: Nutrition and Non-nutritional indicators: socio-cultural, biologic, environmental and economic.

7. **Major Nutritional Problems** – etiology, prevalence, clinical manifestations, preventive and therapeutic measures of:
   - Macro and micro nutrient deficiencies
   - Other nutritional problems like lathyrisim, dropsy, aflatoxicosis, alcoholism and fluorosis.
   - Overweight, obesity and chronic degenerative diseases

8. **National Food and Nutrition Policy, Plan of Action and Programmes.**

9. **Approaches and Strategies for improving nutritional status and health:** Programmatic options- their advantages and demerits. Feasibility, political support, available resources (human, financial, infrastructural) Case studies of selected strategies and programmes: their rationale and context, how to select interventions from a range of possible options:
   - Health-based interventions, Food-based interventions including fortification and genetic improvement of foods, supplementary feeding, Nutrition education for behaviour change

10. **Policy Analysis and Operational Research**

11. **Programme Design Planning, Implementation, Operations Monitoring, Surveillance and Evaluation**


**Practicals**

1. Comparison of rural, urban and tribal communities for: (a) determinants of malnutrition (b) socio-economic groups (c) the types of nutritional problems in different segments and age groups through analysis of secondary data

2. Critical appraisal of existing interventions and programmes in the voluntary sector and government and suggestions to improve the same vis-a-vis target groups in society and specific needs.

3. Development of a plan for a nutrition intervention project in the community (The target group(s) need to be specified).
   Development of low cost nutritive recipes suitable for various vulnerable groups at micro, meso and macro levels.

4. Field experience in operational public nutrition programmes: nutrition rehabilitation centres, fortification programmes, cost analysis.
References


3. SCN News, UN ACC/SCN Subcommittee on Nutrition.

4. State of the World's Children, UNICEF.

5. Census Reports.


19. Documents and Reports published by the International Vitamin A Consultative Group

20. Documents and Reports of the International Nutritional Anemia Consultative Group


CLINICAL AND THERAPEUTIC NUTRITION

Code: 52114
Credits: T 3 P 3
Periods/week: 9
Marks: 150

Elective

Objectives

The course will enable the students to:
- Understand the etiology, physiologic and metabolic anomalies of acute and chronic diseases and patient needs.
- Know the effect of the various diseases on nutritional status and nutritional and dietary requirements.
- Be able to recommend and provide appropriate nutritional care for prevention and treatment of the various diseases.

Contents

1. **Nutritional screening and assessment of nutritional status of hospitalized and outdoor patients.** Identification of high risk patients. Assessment of patient needs based on interpretation of patient data – clinical, biochemical, biophysical, personal etc.
2. **Newer trends in delivery of nutritional care and dietary counselling.**
3. **Diet, nutrient and drug interaction.** Effect of drugs on ingestion, digestion, absorption and metabolism of nutrients. Effect of food, nutrients and nutritional status on drug dosage and efficacy.
4. **Nutritional support** – Recent advances in techniques and feeding substrates.
5. **Etiopathophysiology, metabolic and clinical aberrations, complications, prevention and recent advances in the medical nutritional management of:**
   - Weight imbalances
   - Cardio vascular disorders
   - Diabetes mellitus and other metabolic disorders
   - GI Tract Disorders
   - Liver and gall bladder, Pancreatic disorders
   - Renal disorders
   - Stress and trauma
- Cancer
- Neurological disorders
- Musculo-skeletal disorders
- Immuno-deficiency disorders
- Genetic disorders
- Infections and AIDS
- Respiratory problems

6. Childhood problems/disorders including inborn errors of metabolism and their nutritional management.

Practicals

1. Collection and storage of biological samples for clinical investigations
2. Market survey of commercial nutritional supplements and nutritional support substrates
3. Commonly used tests for diagnosis of various diseases – system – wise
   - Interpretation of patient data and diagnostic tests and drawing up of patient diet prescription, using a case study approach.
   - Follow up – acceptability of diet prescription, compliance, discharge diet plan.
4. Preparation of diet counselling aids for common disorders.
5. Planning and preparation of diets for patients with common multiple disorders and complications and discharge diet plans.

References

Journals and Other Reference Series

12. Nutrition Update Series
13. World Review of Nutrition and Dietetics
14. Journal of the American Dietetic Association
15. American Journal of Clinical Nutrition
17. Nutrition Reviews
INSTITUTIONAL FOOD ADMINISTRATION

Code: 52115  
Credits: T 3 P 3  
Periods/week: 9  
Marks: 150

Objectives

- To develop a knowledge base in key areas of Institutional Food Administration
- To provide practical field level experience in Institutional Food Administration
- To impart necessary expertise to function as a food service manager
- To equip individual to start their own food service unit leading to entrepreneurship
- To develop critical abilities and provide basic grounding in research techniques

Theory

1. Introduction to Food Service Systems
   - Evolution of the food service industry
   - Characteristics of the various types of food service units

2. Approaches to Management
   - Theories of management
   - Aspects of management
   - Styles of management
   - Management tools

3. Strategies in Planning
   - Conceptual strategy
   - Marketing strategy
   - Financial strategy
   - Types of plans

4. Management of Resources
   - Finance
     - Determining the finance needed to establish or run an unit
     - Budgets
     - Sources of finance
     - Planning adequate cash flow
• Space & Equipment
  - Steps in planning layouts
  - Determining equipment
  - Selection and placement
  - Maintenance of equipment
  - Layout analysis
• Material
  - Menu planning
  - Planning the material needed
  - Methods of selection
  - Storage
  - Quantity food production
  - Service and modes of delivery
• Staff
  - Manpower planning
  - Manpower placement
  - Recruitment, induction, training, motivation and performance appraisal
• Time and Energy
  - Measures for utilisation and conservation

5. Techno-economic feasibility of food production/service enterprise
6. Cost accounting/analysis
  • Food cost analysis
  • Records to be maintained
  • Reports and trend analysis
7. Marketing and sales management
  • Marketing strategies
  • Sales analysis
  • Market promotion
8. Quality assurance
  • Food quality
  • Total quality management
9. Computer aided record maintenance and management

Practicals
1. Market survey and analysis of processed and finished products.
2. Evaluation of Food Service units – 2 Conventional, commissary.
3. Market survey of Food service equipment.
5. Planning menus for quantity.
   - Banquet
   - Outdoor catering
   - Packed meals
   - Restaurant


7. Cost Analysis of menus in
   - College canteen
   - Hostel mess
   - Hospitals (private, charitable, government)

8. Analysis of Food safety and Hygiene.

References

Management


   Planning
   Operations
   Hayden Book Company, New Jersey.


Personnel Management


Cost Control


**Layout and Design**

ADVANCED FOOD SCIENCE AND CHEMISTRY

Code: 52116
Credits: T 3 P 3
Periods/Week: 9
Marks: 150

Objectives
This course is designed to help students to:
- Gain knowledge regarding the physical and chemical properties of the food constituents
- Understand the chemical reactions and physical changes which occur during the production, processing, storage and handling of foods and their applications.
- Be familiar with the recent advances and research in the field.
- Be familiar with effects of reactions on the quality and safety of food.

Contents

Theory
1. Introduction to food chemistry
2. Water and Ice
   - Review of structure and properties of water and ice.
   - Water activity and storage life of foods.
   - Phase transition of foods containing water.
   - Relation between viscosity and temperature – WLF equation
   - Water – solution interactions.
   - Heat transfer during processing
3. Food Stability: Freezing, lyophilization, air drying, shelf life
   - Amino acids, peptides, proteins
   - Review of structure
   - Physico-chemical properties, functional properties
   - Chemical and enzymatic modifications
   - Processing induced physical, chemical and nutritional changes
   - Texturised proteins
- Protein isolate
- Protein hydrolysate

4. **Enzymes: Review of nomenclature, properties and isolation**
   - Factors influencing enzymes
   - Enzyme inactivation and control
   - Food modification by enzymes
   - Immobilized enzymes in food processing
   - Enzymes in waste management
   - Enzymes and health/nutrition/food issues

5. **Lipids**
   - Review of nomenclature, classification and properties
   - Role of food lipids in flavour: Effects of processing on chemical structure and physical properties
   - Precursors of Aroma compounds
   - Physiological effects of lipids and safety issues
   - Lipids exposed by frying conditions, hydrogenated fat and irradiated foods
   - Lipid – protein complexes

6. **Carbohydrates: Review of classification, structure and properties**
   - Reactions of mono and oligosaccharides
   - Use of polysaccharides in food: Individual Polysaccharides: Agar, Alginates, Carageenans, Gum Arabic, Xanthan, Guar gum, Tamarind flour, Pectins
   - Starch: Properties of amylose and amylopectin and effect of processing
   - Polysaccharide hydrolysates
   - Modified Starches: mechanically damaged starches, extruded starches, pregelatinized, thin boiling starch, cross-linked starches, starch ethers and esters, oxidized starches
   - Use of non-starch polysaccharides in food

7. **Flavours**
   - Methods of flavour analysis
   - Taste and non-specific saporous sensation
   - Individual aroma compounds: Vegetable, fruit and spice flavour, flavours from lactic acid/ethanol fermentation, flavour volatiles from fats and oils, flavour volatiles in muscle foods and milk
   - Thermally induced process flavours
   - Volatiles from oxidative cleavage of carotenoids
   - Interactions with other food constituents
   - Natural and synthetic flavours
8. **Food Colorants**
   - Pigments in animal and plant tissues
   - Food colours – Types and properties, regulatory aspects, safety issues

9. **Beverages: Harvesting, processing and by-products of:**
   - Coffee, tea, cocoa, alcoholic beverages.

10. **Problems of chemical residues in food**

11. **Recent advances in biotechnology:** Recombinant DNA techniques, genetically modified foods.

**Practicals**

1. a. Chemical quality of water: Tests for different parameters.
   b. Relationship of vapour pressure to temperature.
   c. Prevention of ice crystal formation.

2. a. Study of structure of starch from different sources.
   Effects of processing on starch – swelling, retrogradation, starch hydrolysis.
   b. Viscosity measurement - in swelling and gelatinization of starch.
   c. Estimation of starch and non-starch polysaccharides.

3. Emulsions: Rheological measurements.

   d. Study of enzyme kinetics from any food source and during processing- effect of pH, temperature.
   e. Estimation of natural toxicants.

5. a. Effect of Factors affecting Fat Lipolysis:
   Fatty acid composition, temperature, moisture, surface area, presence of pro and anti-oxidants: Measurement of peroxide value, TBA, total and volatile components

6. **Surface tension:** Measurement in hydrophilic, hydrophobic fluids and in emulsions

7. **Measurement of browning in a food system**

8. **Polyphenol oxidase activity in enzymatic browning**

9. **Estimation of tannins in relation to astringency**

10. **Volatile oils in spices**

11. **Extraction and estimation of selected additives**

12. **Leavening power of different leavening agents**
References

FOOD PROCESSING AND TECHNOLOGY

Code: 52117
Credits: T 3 P 2
Periods/Week: 7
Marks: 125

Objectives

This course is designed to:

- Impart systematic knowledge of basic and applied aspects of food processing and technology.
- Provide the necessary knowledge of basic principles and procedures in the production of important food products.
- Orient the students to potential use of various by-products of food industry.

Contents

1. Introduction: Main crops grown in the country – importance and storage
2. Physical principles in food processing operations
   - Thermal processing – Degree of processing or preservation, selecting heat treatments, heat resistance of micro organisms, nature of heat transfer, protective effects of food constituents, types of thermal treatments.
   - Refrigeration – Refrigeration, cool storage and shelf life extension; cool storages with air circulation, humidity control and gas modification (i.e. CA, MA, & SA)
   - Freezing – Changes during freezing – rate of freezing, choice for final temperature for frozen foods, freezing methods, freezing effects.
   - Dehydration – Dehydration, water activity and food safety/quality; methods of dehydration.
   - Ionising radiations – Forms of radiant energy; ionising radiations, sources and properties; radiation units; radiation effects, limiting indirect effects; dose fixing factors; objectives in food irradiation, safety and quality of irradiated food; irradiation of various foods and comparison with other methods of preservation.
3. Chemical principles in food processing
   Preservation/processing by sugar, salt, curing, smoke, acid and chemicals; chemical changes in foods that affect texture, flavour, colour, nutritive value and safety during
handling, storage and processing; Chemical and biochemical reactions affecting food quality and safety.

**Processing technology of foods and nutritional implications for the following:**

4. **Cereals and Pulses**
   - Wheat grain characteristics and products; wheat milling process; milling of durum or semolina; macaroni or pasta products, noodles, wheat starch and gluten fractionation, baking technology, production of bread, biscuits and cakes.
   - Corn wet milling; zein separation; corn starch products;
   - Barley malting; dry milling and air classification; wet fractionation of barley, pearling.
   - Storage and quality of cereal grains
   - Rice processing, fractionation, quick-cooking rice, parboiled rice, rice based instant foods.
   - Pulses – processing, elimination of toxic factors, quick-cooking dals, fermentation and germination.

5. **Oilseeds**
   - Oilseed pressing, solvent extraction, purification (degumming, refining, bleaching, deodorization), hydrogenation, plasticising and tempering, products – butter, margarine, shortening, mayonnaise and salad dressing, inter-esterification and production of MCT.

6. **Fruits and Vegetables**
   - Structure, composition, physiological and biochemical changes during ripening, handling and storage.
   - Varietal, harvesting and pre-processing considerations for vegetables; post harvest processing practices. Processing of vegetables, canning, freezing, dehydration, pickles and chutneys.
   - Potato processing – Raw material handling and storage, raw material quality and suitability for chips, French fries, dehydrated granules and boiled/canned potatoes; processing for chips, French fries and dehydrated granules.
   - Fruit processing – Citrus juices, apple juices, slices and dehydrated products, grape juice and raisins. Canning, fruit-based beverages and concentrates, squashes, jams, jellies, ketchup’s, sauces, high sugar, high acid products.

7. **Milk and Milk Products.**
   - Milk processing – Classification, separation and standardization, pasteurisation, off-flavour removal, homogenisation, packaging; UH sterile milk.
8. **Meat, Fish and Eggs**
   - Chemistry of processed meats, Ageing and tenderising, curing, smoking and freezing of meat, fresh storage of meat.
   - Fish preservation and processing.
   - Meat and fish products: preservation by curing, smoking, salting and pickling and dehydration, corned beef, sausages, salami, bacon, luncheon meat.
   - Dehydrated egg powder and frozen egg, egg storage.
   - Sources of bone meal, gelatin, casing, plasma and blood, curing.

9. **Additives and Preservatives**
   - Definition of food additives; acids, bases, buffer systems and salts, chelating agents, antimicrobial agents, sweeteners, stabilizers and thickeners, fat replacers, firming texturizers, appearance control and clarifying agents.
   - Flavour enhancers, aroma substances, sugar substitutes, sweeteners, antioxidants,
   - Anticaking agents, bleaching agents, protective gases.

10. **Spices:** Processing and extraction of essential oils and colours, stability, storage and preservation.

11. **Fermentation Technology**
   - Fermentation technology, yeast, milk products, fermented vegetables, beer, vinegar, fermented soy products.
   - Enrichment and fortification technology, high protein food technology.

12. **Functional foods and Technologies to meet special needs. New advances.**

13. **Waste disposal and sanitation**
   - Waste characteristics, treatments and technologies, food plant sanitation.

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**References**


ASSESSMENT OF NUTRITIONAL STATUS

Code: 52118
Credits: T 2 P 2
Periods/week: 6
Marks: 100

Objectives

The course is designed to:

- Orient the students with all the important state-of-the-art methodologies applied in nutritional assessment and surveillance of human groups.
- Develop specific skills to apply the most widely used methods.

Contents

Theory:

1. Nutritional assessment as a tool for improving the quality of life of various segments of the population including hospitalized patients.
2. Current methodologies of assessment of nutritional status, their interpretation and comparative applications of the following:
   - Food consumption
   - Anthropometry
   - Clinical and Laboratory
   - Rapid Assessment & PRA
   - Functional indicators such as grip strength, respiratory fitness, Harvard Step test, Squatting test.
3. Nutritional Surveillance – Basic concepts, uses and setting up of surveillance systems.
4. Monitoring and Evaluation

Practicals

1. Training in all assessment techniques applicable for individuals and community, including ones used for hospital – based patients
   - validity and reliability of these techniques.
2. Community based project for assessment of nutritional status of any vulnerable group.
3. A small evaluation study of a nutrition project.

References
9. FAO Nutritional Studies No.4 (1953): Dietary Surveys: Their Technique and Interpretation, FAO.
11. Fidanza.
IMPROVING HEALTH AND NUTRITION: IEC APPROACHES

Code 52119
Credits: T 2 P 2
Periods/week: 6
Marks: 100

Elective

Objectives

This course will enable students to:

- Develop understanding regarding the vital aspects of communication and various Audio and Visual Media/Mass Media and their use in Nutrition and Health Education
- Be familiar with important IEC programmes
- Develop skills to plan and use IEC.

Contents

1. **Concept of Communication**
   - Concept of Communication and Mass Communication
   - Scope of Communication
   - Elements of Communication
   - Models of Communication
   - Communication Process
   - Approaches to Communication
   - Barriers to Communication
   - Communication for Extension Education and Development

2. **Introduction to IEC (Information, Education and Communication).**

3. **Aims and Objectives: Importance of IEC, relevance to programmes.**

4. **IEC for Behavioural Changes: Behaviour and determinants of behaviour, need for IEC**

5. **Different Media, their characteristics and use**
   a. Audio visual aids (Graphics aids, puppets and other three dimensional aids, display boards and projected and non-projected aids).
   b. Mass Media:
      - Print
      - Radio/Recordings
6. **Methods, Techniques and Tools.**

7. **Planning effective IEC Programmes** — Broad-based strategy and for specific objectives. Identification of key messages for re-inforcement, preparation of IEC material. Refining of IEC messages. Social mobilisation, social marketing and role of community. Training to use IEC.

8. **Implementation – Use of IEC,** training supportive supervision and monitoring.

9. **IEC for different target groups:**
   - Policy makers
   - Managerial level and middle level officials from Government donor agencies and NGOs
   - Grassroot functionaries
   - Community

10. **Impact Assessment**

11. **Case studies of various IEC programmes**

12. **Specific National Programmes and IEC – Influence at mass level.**

**Practicals**

Practicals to be conducted through:

- Field work
- Placements and
- Project work

1. **Field work:** Study of existing IEC approaches and materials in various programmes at micro and macro levels. Appraisal of techniques, tools, messages, coverage and outreach, costs and impact

2. **Planning and Implementation of a Project:** Identification of a problem/area for IEC. Preparation of suitable IEC material for one-to-one, group and mass communication including implementation, monitoring and evaluation.

**References**


5. ASPEN Reference Group (1997): Community Health Education and Promotion: A guide to program design and evaluation, Gaithersburg, M.A. Author.


*Journals*

1. Journal of Nutrition Education
FOOD PRODUCT DEVELOPMENT AND MARKETING

Code: 52120  
Credits: T 1 P 3  
Periods/week: 7  
Marks: 100

Elective

Objectives

This course will enable students to:

- Understand and know various aspects of food product development including Food Science and Technology, Marketing and Consumer research, finance and communication.
- Develop products which meet consumer needs, and nutritionally and commercially viable.
- Recognize the potential for entrepreneurship through marketing.

Contents

1. **New Food Products**
   - Definition, Classification, Characterization Factors shaping new product development-Social concerns, health concerns impact of technology and market place influence.

2. **Reasons for new food product development** (corporate, market place, technological and governmental influences) Assessing needs from various perspective.

3. **Brief introduction to Phases in Food Product Development**

4. **Generation of New Product Ideas**
   - Internal sources of ideas
   - External sources of ideas
   - Market place analysis

5. **Screening**
   Team Approach and involvement of various departments.
   - Objectives of screening
   - Criterion of screening

6. **Development Process**
   - Market Sector perspective and Market research.
- Technical development – Recipe development and scale up, food safety and food spoilage.
- Newer food stabilizing systems: Thermal processing, ohmic heating, stabilizing with high pressure, other non-thermal stabilizing systems, control of water, controlled/modified atmosphere packaging, irradiation, hurdle technology, low temperature stabilization
- Use of various new ingredients to suit product functions.
- Packaging, Design Graphics and Labeling

7. **Refining the Screening Procedure for the product**
   - Sensory Evaluation
   - Shelf life Testing
   - Product Integrity and conformance to standards

8. **Test Marketing; Evaluating results and analyzing**

9. **Entrepreneurship: Plant location, investment, Financing the project**

10. **New products in Food Service Industry and Food Ingredient industry**

**Practicals**

1. Market Survey, Consumer survey to identify new products in terms of
   - Line Extension
   - Repositioning Existing Products
   - New form/Reformulation
   - New packaging of existing products
   - Innovative products
   - Creative Products.

2. Tapping traditional foods and unconventional sources of foods.
   Minimizing post harvest losses.

3. Identification of product for development
   - Concept
   - Market research the concept and concerned product

4. Development and Screening the products, developing criteria for screening scaling up

5. Test Marketing


**References**


Journals

1. International Journal of Food Science and Technology.
2. Food Technology
3. Journal of Food Technology
4. Trends in Food Science and Technology
5. Critical Reviews in Food Science and Nutrition
FOOD SAFETY AND QUALITY CONTROL

Code 52121
Credits: T 1 P 3
Periods/week: 7
Marks: 100

Objectives
This course will enable students to:
- Know the importance of quality assurance in food industry.
- Know the various tests and standards for quality assessment and food safety.
- Know the various tests used to detect food adulterants.
- Be familiar with the fundamentals that should be considered for successful quality control programme.

Contents
1. Introduction to quality assurance and food safety assurance. Current concepts of quality control.
2. Quality assurance programme: Quality plan, documentation of records, product standards. Product and purchase specifications, process control and HACCP, hygiene and housekeeping, corrective action, quality and programme and total quality process.
4. Product Evaluation:
   - Sampling for product evaluation and line control.
   - Statistical quality and process control
   - Sample preparation
   - Reporting results and reliability of analysis.
   - Tests for specific raw food ingredients and processed. Foods including additives:
     a. Proximate principles
     b. Nutrient analysis
     c. Quality parameters and tests of adulterants.
5. Consumer protection.
Practicals

Objectives

1. To test different foods for their quality
2. To detect adulteration in different foods
3. To be familiar with tests used for quality control.

1. Assessment of purity and quality using appropriate standard tests for the following:
   - Water including mineral water.
   - Milk and milk products
   - Fats and oils including butter, ghee and hydrogenated fat.
   - Ice creams and sherbets
   - Cereals and cereal products
   - Pulses and legumes
   - Spices and condiments and salt, pickles, sauces and chutneys.
   - Tea and coffee
   - Canned, dehydrated, frozen and bottled fruit/vegetable products
   - Confectionery
   - Flesh foods
   - Specific food ingredients such as glycerine, vinegar.
   - Fruit juices, concentrates and beverages.

2. Detection/Estimation of Food Additives and Contaminants

References

NUTRITIONAL EPIDEMIOLOGY

Code: 52122
Credits: T 3 P 0
Periods/week: 3
Marks: 75

Objectives

This course is designed to:

- Understand the principles of Epidemiology, nutritional epidemiology and its importance in Community and Public Health.
- Be able to design and evaluate studies/nutritional programmes.
- Be aware of characteristics and use of biological markers in understanding mechanistic basis for association revealed from epidemiological studies.

Contents

1. Introduction to Epidemiology and Branches of Epidemiology
   Types of Epidemiology
2. Epidemiological Information: Collecting epidemiological data, Secondary Routine Data.
3. Patterns of Disease:
   Descriptive Epidemiology, Cross sectional Analysis, Prevalence and Incidence, Risk, factors, Risks and Odds.
   Relative and Attributable risks.
6. Assessment of Food Consumption, Intake and validation of Assessment.
8. Socio demographic and psycho social variables.
10. Design and planning of Nutritional Epidemiological studies.
   Discussion of selected case studies.
References

17. Thompson, F.E; Moter, J; E; Freedman, L; Clifpred, C. and Willet, W.C(1994) Dietary Assessment Calibration/Validation Studies Register. National Cancer Institute, Bethesda, Maryland.
MATERNAL AND CHILD NUTRITION

Code: 52123
Credits: T 3 P 0
Periods/week: 3
Marks: 75

Objectives

This course is designed to enable the students to:

- Understand physiological changes in pregnancy and lactation.
- Get acquainted with growth and developmental changes from conception till adolescence.
- Understand the inter-relationship between nutrition and growth and development during life cycle.

Contents

1. Current Nutrition and Health Status of Women and Children in India.
3. Importance of Maternal Nutrition:
   - Importance of nutrition prior to and during pregnancy.
   - Physiology and endocrinology of pregnancy and embryonic and fetal growth and development
   - Nutritional requirements during pregnancy
   - Adolescent Pregnancy
   - Pregnancy and AIDS
   - Pregnancy and TB
   - Intra-uterine growth retardation
   - Complications of pregnancy and management and importance of antenatal care.
   - Congenital malformation, fetal alcohol syndrome and gestational diabetes mellitus.
4. Lactation
   - Development of mammary tissue and role of hormones
- Physiology and endocrinology of lactation – Synthesis of milk components, let down reflex, role of hormones, lactational amenorrhea, effect of breast feeding on maternal health
- Human milk composition and factors affecting breastfeeding and fertility
- Management of lactation – Prenatal breastfeeding skill education. Rooming in, problems – sore nipples, engorged breast, inverted nipples etc.
- Exclusive breastfeeding
- Baby friendly hospitals initiative
- Breast feeding in the age of AIDS

5. **Infant physiology and the preterm and LBW infants: Implications for feeding and management.**

6. **Growth and development during infancy, childhood and adolescence.**

7. **Feeding of infants and children and dietary management**

8. **Malnutrition in mothers and children: etiology and management (in brief).**

9. **Concept of small family, methods of family – planning, merits and demerits.**

10. **Policies and programmes for promoting maternal and child nutrition and health.**

**References**

2. International Child Health: A Digest of Current Information
10. ACC/SCN Reports
GERIATRIC NUTRITION

Code: 52124  
Credits: T 2 P 1  
Periods/week: 4  
Marks: 75

Elective

Objectives

The course is designed to:

- Familiarise the students with the multifaceted aspects of ageing.
- Make the students competent for nutritional and health care of the elderly.

Contents

1. The ageing process- physiological, biochemical and body composition changes.
2. Theories of ageing
4. Nutritional requirements of the elderly and dietary management to meet nutritional needs
5. Chronic degenerative diseases and nutritional problems of the elderly – their etiopathogenesis, management, prevention and control.
6. Policies and programmes of the government and NGO sector pertaining to the elderly.

Practical

Planning and preparation of diets for the elderly in health and sickness.
Visit to old age homes
Case studies

References


Journals

1. American Journal of Clinical Nutrition
2. Gerontology
3. Journal of the American Geriatric Society
4. Age Ageing
5. Journal of Applied Gerontology
6. Age
7. Journal of Gerontology
FOOD TOXICOLOGY

Code 52125
Credits: T 3 P 0
Periods/week: 3
Marks: 75

Elective

Objectives

This course is designed for students to:
1. Familiarize with hazards and toxicity associated with food and their implications for health.
2. Know the various kinds of hazards.
3. Be familiar with various tests.

Contents

1. Introduction to Food Safety and Toxicology: Hazards – Microbiological, Nutritional, Environmental, Natural Toxicants, Pesticide residues and Food Additives.
2. Assessment of Food Safety
   - Risk assessment and risk benefit
   - Indices of human exposure
   - General design of toxicity assays
   - Acute toxicity
   - Mutagencity and carcinogenicity
   - Reproductive and developmental toxicity
   - Neurotoxicity and behavioural effects
   - Immunotoxicity
   - Biotechnology and food safety
   - HACCP
4. Microbial Problems in Food Safety including Mycotoxins and viruses
7. Naturally occurring toxicants & food contaminants: Sea food toxins, biogenic amines, mutagens & carcinogens in heated & processed foods, coffee & methylxanthines, toxicity of mushrooms alkaloids, phenolic compounds, glucosinolates, protease inhibitors, phytate, other antinutritional compounds.


References
NUTRITION FOR HEALTH AND FITNESS

Code: 52127
Credits: T 2 P 2
Periods/week: 6
Marks: 100

Objectives
This course will prepare the students to:

- Understand the components of health and fitness and the role of nutrition in these.
- Make nutritional, dietary and physical activity recommendations to achieve fitness and well-being.
- Develop ability to evaluate fitness and well-being.

Contents
1. **Definitions, components and assessment criteria of age:** Specific fitness and health status.
2. **Holistic approach to the management of fitness and health:** Energy input and output. Diet and Exercise. Effect of specific nutrients on work performance and physical fitness. Nutrition, exercise, physical fitness and health inter-relationship.
3. **Review of different energy systems for endurance and power activity:** Fuels and nutrients to support physical activity. Shifts in carbohydrate and fat metabolism. Mobilization of fat stores during exercise.
5. **Water and electrolyte balance:** Losses and their replenishment during exercise and sports events, effect of dehydration, sports drinks.
6a **Significance of physical fitness and nutrition in the prevention and management of weight control, obesity, diabetes mellitus, CV disorders, bone health and cancer.**
6b: **Nutritional and exercise regimes for management of obesity.** Critical review of various dietary regimes for weight and fat reduction. Prevention of weight cycling.
7. **Defining nutritional goals/guidelines appropriate to health, fitness and prevention and management of the above chronic degenerative disorders.**
8. **Nutrition and exercise regimes for pre and post-natal fitness**
9. **Alternative systems for health and fitness like ayurveda, yoga, meditation, vegetarianism and traditional diets.**

**Practicals**

1. Assessment of nutritional status including Body composition.
2. Physiological parameters like heart rate and blood pressure
3. Assessment of coronary risk profile- RISKO factor
4. Assessment of bone health
5. Planning diets and formulating dietary guidelines for:
   - Fitness and health
   - Prevention of chronic degenerative disorders
   - Obesity management
   - Management of diabetes mellitus and CVD
6. Review of existing alternative diet related systems for physical fitness and health.

**References**


**Journals**

MANAGEMENT OF NUTRITION PROGRAMMES

Code 52128
Credits: T 2 P 2
Periods/week: 6
Marks 100

Objectives
This course will enable students to:

- Be familiar with various programmes which can be undertaken to prevent and control nutritional problems at regional and national level.
- Be able to plan, implement, monitor and evaluate programmes.

Contents
1. **Global, National and Regional Concerns** – Situation of vulnerable groups vis-à-vis food, nutrition and health security.
4. **Appraisal of existing programmes and interventions** – Merits, demerits. Lacunae-gaps vis-à-vis objectives and goals.
5. **Implementation of Programmes** – Developing prototypes, training and HRD aspects of the programmes. Pilot and prototype studies, innovations.
7. **Management Information Systems (MIS).**
Practicals

Practicals to be conducted through field placement with:
- Donor or bilateral agency
- Government Scheme/Programme
- NGO's

In (a) and (b) the activities will be largely familiarization with various aspects of programme planning, implementation, monitoring and evaluation.

In (c) the students will be required to identify an area and undertake the following:
- Appraisal of Programme
- Situation analysis and identification of programming area for intervention.

Planning, implementation, monitoring, development of MIS, financial implications, planning for Long-term & Short term impact assessment.

References


NUTRITION IN CRITICAL CARE

Code: 52129
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Objectives
The course will enable the students to:
- Understand the physiology, metabolism and special nutritional requirements of the critically ill.
- Be familiar with the special nutritional support techniques and feeding formulations to meet their nutritional needs.

Contents
1. Nutritional screening and nutritional status assessment of the critically ill.
2. Nutritional support systems and other life – saving measures for the critically ill.
3. Role of immuno enhancers, conditionally essential nutrients, immunosuppressants, and special diets in critical care
4. Patho-physiological, clinical and metabolic aspects, understanding of the special nutritional requirements, nutritional goals and monitoring the therapy in critical illnesses like
   - Stress, trauma, sepsis, burns
   - CV complications and surgery
   - ESRD, dialysis, transplant
   - Multiple organ failure
   - Cancer
   - AIDS
   - GI tract surgery, GER (Gastro-esophageal reflux) and complications
   - Hepatic failure and transplants
   - Neurosurgery
5. Complications of Nutritional Support Systems including Refeeding Syndrome
7. Diet related ethical issues in the terminally ill
References

NUTRITION IN EMERGENCIES AND DISASTERS

Code: 52130
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Elective

Objectives

This course is designed to:

- Familiarize students with various natural and manmade emergencies and disasters having an impact on nutrition and health status.
- Understand the special nutritional concerns arising out of these situations.
- Understand strategies for nutritional rehabilitation management of the health of emergency affected populations.

Contents

1. Natural/Manmade disasters resulting in emergency situations:
   - Famine, drought, flood, earthquake, cyclone, war, civil and political emergencies.
   - Factors giving rise to emergency situation in these disasters.
   - Illustration using case studies from Indian subcontinent.

2. Nutritional problems in emergencies in vulnerable groups
   - Causes of malnutrition in emergency situations.
   - Major deficiency diseases in emergencies
   - Protein – Energy Malnutrition
   - Specific deficiencies

   - Control of communicable diseases in emergencies – Role of immunization and sanitation.

4. Assessment and surveillance of Nutritional status in emergency affected populations
   - Scope of assessment of malnutrition in emergencies
   - Indicators of malnutrition. Clinical signs for screening acute malnutrition
- Anthropometric assessment of nutritional status. Indicators and cut-offs indicating seriously abnormal nutrition situation: Weight-for-height based indices, MUAC, social indicators.
- Organisation of nutritional surveillance and individual screening.

5. Nutritional Relief and Rehabilitation
- Assessment of food needs in emergency situations.
- Food distribution strategy – Identifying and reaching the vulnerable group – Targeting Food Aid
- Mass and Supplementary Feeding
- Therapeutic Feeding
- Special foods/ration for nutritional relief
- Local production of special foods
- Local foods in rehabilitation
- Organisation of mass feeding/general food distribution,
- Feeding centres,
- Transportation and food storage,
- Sanitation and hygiene,
- Evaluation of feeding programmes,
- Household food security and nutrition in emergencies

6. Public nutrition approach to tackle nutritional problems in emergencies.

References
3. Field Exchange, Newsletters by Emergency Nutrition Network, Dept. of Community Health and General Practice, Ireland.
4. SCN News, Newsletters by UN ACC/SCN Sub-committee on Nutrition.
8. The Management of Nutrition in Major Emergencies WHO – in Collaboration with UNHCR, International Federation of Red Cross and Red Crescent Societies and WFP.


INSTRUMENTATION FOR FOOD ANALYSIS

Code: 52131
Credits: T 0 P 2
Periods/week: 4
Marks: 50

Elective

Objectives

This course is designed to:
- Introduce students to various modern instrumental techniques in food analysis.
- Understand the applications, strengths and limitations of different methods.

Contents

1. Spectrometric Methods
   a. UV and visible molecular absorption spectrometry.
   c. Fluorescence Spectrometry
   d. Atomic Mass Spectrometry
   e. Infrared Spectrometry
2. Separation Techniques
   a. Chromatographic Separations: Liquid, GC, TLC, super critical fluid extraction chromatography.
   b. Electrophoresis.
7. Relative Humidity and Water Activity.
References


SCIENTIFIC WRITING

Code: 52132
Credits: T 1 P 1
Periods/week: 3
Marks: 50

Objectives

To be able to appreciate and understand importance of writing scientifically.
- To develop competence in writing and abstracting skills.
- To write either a draft research proposal or a chapter of dissertation.

Contents

1. Scientific writing as a means of communication.
   - Different forms of scientific writing.
   - Articles in journals, Research notes and reports, Review articles, Monographs, Dissertations, Bibliographies.

2. How to formulate outlines.
   - The reasons for preparing outlines
   - as a guide for plan of writing
   - as skeleton for the manuscript
   - Kinds of outline
   - topic outlines
   - conceptual outline
   - sentence outlines
   - combination of topic and sentence outlines

3. Drafting Titles, Sub Titles, Tables, Illustrations.
   - Tables as systematic means of presenting data in rows and columns and lucid way of indicating relationships and results.
   - Formatting Tables: Title, Body stab, Stab Column, Column Head, Spanner Head, Box Head
   - Appendices: use and guidelines
4 The writing process
   - Getting started
   - Use outline as a starting device
   - Drafting
   - Reflecting, Re-reading
     ● Checking organization
     ● Checking headings
     ● Checking content
     ● Checking clarity
     ● Checking grammar
   - Brevity and precision in writing
   - Drafting and Re-drafting based on critical evaluation

5 Parts of Dissertation/Research report/ Article
   - Introduction
   - Review of Literature
   - Method
   - Results and Discussion
     ● Ask questions related to: content, continuity, clarity, validity internal consistency and objectivity during writing each of the above parts.

6 Writing for Grants
   - Clearly state the question to be addressed
   - Rationale and importance of the question being address
   - Empirical and theoretical conceptualization
   - Presenting pilot study/data
   - Research proposal and time frame
   - Clarity, specificity of method.
   - Clear organization
   - Outcome of study and its implications
   - Budgeting
   - Available infra-structure and recourses
   - Executive summary

References
INTERNERSHIP/FIELD PLACEMENT PROJECT

The student will be required to undergo an internship/field placement for a total duration of 6 – 8 weeks in their chosen area of interest which will facilitate their pursuing a professional career in the same field. This program could be taken up either as a single block or in two different blocks. It is mandatory that the organisation/institutions (public/private) participating in the field placement programme be of good professional standing. The list could include hospitals, state run/NGO administered public nutrition programmes, food industry etc. the students will be required to submit and present a report of the internship/field placement project after its completion. It is also envisaged that the participating organisation/institution will give their performance appraisal of the students work.

This programme is designed with the following objectives:

1. To enable the students to acquire an in-depth understanding of the practical aspects of knowledge and skills acquired during the course work in the relevant subject/subjects.
2. To gain hands on experience for higher proficiency in their selected area of expertise.
3. To help the students to develop and have their analytical abilities for situation analysis and bringing about improvements.
RESOURCE MANAGEMENT

The major objective of the specialization in Resource Management is to train students to optimise the use of resources - human and material - to achieve family/institutional goals and improve the quality of life of the families and communities. This is achieved by synthesizing knowledge from physical, biological and social sciences and technology. This integrated and synthesized knowledge is to be applied in managing family/organizations. In the context of changing scenario in all facets of society and the socio economic and political changes, the curriculum in Resource Management address to the family and societal problems which ultimately would lead to family and community well being which is the crux of development in the national context.

The curriculum is planned to prepare students to be effective managers of the family and the community by managing the human and material resources effectively. It should also enable them to develop professional competence for jobs in the private and public sector.

The curriculum as a whole deals with the roles and interrelationship of individuals in the family and the near environment, relationship of design, changing technology and environment to standards of living and human well-being. Emphasis is laid on management of resources and of change, creative cognitive skills for analysis, problem identification and solving, technological skills in order to create and change products and machines and using them effectively, research skills in order to identify and help to broaden the knowledge base and to evaluate. Besides, considerable attention is given to give enough input to students to develop communication skills, leadership skills, cooperative skills and skills in professional development in order to understand and foster continued competence and commitment.

- The specific objectives of the specialization are :-
- To understand the significance of Resource Management in the current socio-economic context.
- To acquire professional skills in financial management and control, designing of interiors and work places and equipment, institutional management and rendering consumer services.
- To develop entrepreneurial skills and self-employment potential.
- To understand the use and application of computers and information technology in interior designing, hospitality administration, research and development.
- To achieve social advancement through value education.
Eligibility

- The candidates should have completed 10 + 2 + 3 with Resource management as Major or Home Science at the B.Sc. level.
- Those who have graduated with Economics, Architecture, Environment, Social work or allied subjects are required to do pre requisites/ remedial courses if admitted to the program as per the recommendation of the academic adviser/Head of the Department.
## LIST OF COURSES

### CORE COURSES

<table>
<thead>
<tr>
<th>Code</th>
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<td>43101</td>
<td>Theory of Management</td>
<td>3-3</td>
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<td>Financial Management</td>
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### ELECTIVE COURSES (Select 20 Credits)

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*Compulsory papers*
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* Compulsory

A total of 60 credits have to be taken by the student to complete the programme. If the number of credits exceed 60, it is alright, but the calculation of the grade point average will be done on the basis of 60 credits only. Internship is part of the programme of study, but does not carry any credit. This can be arranged during the course of study or after the completion of the programme. It can be arranged in one single assignment or two. A minimum of 6 weeks should be provided for internship for each student under staff supervision.
RESEARCH METHODS AND STATISTICS

Code: 40101
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives

- To understand the significance of statistics and research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- To understand and apply the appropriate statistical technique for the measurement scale and design.

Contents

1. Science, scientific methods, scientific approach.
2. Role of statistics and research in Home Science discipline.
   Objectives of research: Explanation, control and prediction.
3. Types of Research: Historical, survey, experimental, case study, social research, participative research.
4. Definition and Identification of a Research Problem
   - Selection of research problem
   - Justification
   - Theory, hypothesis, basic assumptions, limitations and delimitations of the problem.
5. Types of variables
6. Theory of probability
   - Population and sample
   - Probability sampling: systematic random sampling, two stages and multi stage sampling, cluster sampling.
   - Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling.
7. **Basic principles of Research Design**
   - purposes of research design: Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto,
   - longitudinal and cross sectional
8. **Qualitative Research Methods**
   - Theory and design in qualitative research
   - Definition and types of qualitative research
   - Methods and techniques of data collection
     - informal group discussions
     - interviews: Key informants, in-depth interviews
     - observations
       - social mapping
       - participatory rapid assessment
       - participatory learning assessment
9. **Data Gathering Instruments**
   - Observation, questionnaire, interview, scaling methods, case study, home visits, reliability and validity of measuring instruments
10. **Scales of measurement and the appropriate statistical techniques.**
11. **Critical analysis of research.**
12. **Writing a research proposal.**
13. **Analysis of data and research report.**

**References**

THEORY OF MANAGEMENT

Code : 43101
Credits: T 3 P 0
Periods/Week : 3
Marks : 75

Objectives

- To understand the significance of management in the micro and macro level organisations.
- To know the conceptual, human and scientific aspects of management functions.
- To develop the ability to evaluate the management efficiency and effectiveness in the family and other organisations.
- To enhance the understanding of the similarities among all areas of management education and research, and dissemination of the professional knowledge, skills and attitude.

Contents

1. History and development of management in India and elsewhere
   - Industrial
   - Farm and agricultural
   - Institutional
   - Household
   - Education

2. Management as a System
   - Definition
   - Elements
   - Types
   - Advantages and limitations of systems approach
   - Application in Family Resource Management

3. Management Abilities
   - Conceptual
   - Human
   - Technical
4. **Decision-making**
   - Meaning
   - Types of decisions
   - Modes of decision making
   - Techniques and tools for decision making: Decision tree
   - Cost benefit analysis

5. **Management Functions and Processes**
   - Planning – Objectives, principles, policies, strategies
   - Organising – Purpose, principles, processes delegation authority, responsibility & accountability.
   - Staffing, purpose, principle, recruitment, appraisal.
   - Guiding, directing, leadership, motivation, communication
   - Controlling, tools for management control, feedback
   - Appraisal/evaluation – Tools and techniques

6. **Human Behaviour in Organisations**
   - Personality, attitudes, motivating factors
   - Group behaviour and dynamics
   - Team management
   - Stress and Conflict Management

7. **Ends Sought through Management**
   - Goals – factors affecting, ends
   - Values – sources of value patterns, status, security
   - Standards – Quality Control; Total Quality Management
   - Harmony, Ethics.

**References**

FINANCIAL MANAGEMENT

Code: 43102
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives

- To become aware of the socio-economic environment of the families.
- To become aware of the aspects of financial management.
- To understand some of the problems and objectives involved in accumulation, control and use of saving.
- To understand cost of living studies and price index.
- To become familiar with the techniques of financial management.

Contents

1. Socio-economic environment
   - National income
   - Income distribution, per capita income
   - Inequalities of income
   - Consumer price index
   - Inflation vs. Deflation
   - Wages and earnings principles of wage determination
   - Wage differentials

2. Financial planning and implementation
   - Budgeting – allocation of resources, identifying aspirations, expectations and goals, objectives, advantages of budgeting, control in the context of changing economic conditions.
   - Purchase, storage, cost reduction.
   - Planning a budget for a
     - Family of fixed income
     - Restaurant/hostel/any selected organisation
     - Boutique
     - Small industry
3. **Record keeping and Accounting**
   - Fundamental principles of accounts.
   - Income and expenditure accounts.
   - Revenue and capital items of expenditure.
   - Balance Sheet/ledger
   - Ratio analysis, cash flow, fund flow

4. **Financing of enterprises/ consumer durables.**
   - Housing
   - Automobile
   - Equipment
   - Education
   - Small Scale Industry

5. **Tax Planning**
   - Types of taxes
   - Principles and procedures of income tax
   - Preparation of statement of income, income tax and filing of income tax in case of returns.
     - Individuals (Salary class)
     - Organisation
     - Non-profit organization
     - Knowledge of various exemptions and deductions.

6. **Savings & Investment**
   - Importance of savings components
   - Saving facilities and investment opportunities
   - Role of credit in finance
   - Role of credit rating agencies in investment or safety and security
     - Evaluation of saving and investment opportunities in India
     - Economic security & financial alternatives

7. **Impact of globalisation and foreign direct investment on business opportunities in India.**

8. **Income and property rights – Wills, Trusts and Legal aspects**

9. **Economic Insecurity**
   - Unemployment, its nature and causes Government programmes designed to increase family financial security.

10. **Project work/research in financial management.**

**References**

CONSUMER IN THE MARKET

Code: 43103
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives

- To familiarize the students with the changing economic environment and the rising consumerism.
- To enhance the understanding of the marketing system and the marketing strategies.
- To have an overview of the consumer behaviour and the consumer movement.
- To help them to become wise consumers for judicial use of resources in the present market systems and environment.

Contents

1. Consumer and the Indian economic environment.
   - Definition and characteristics of consumers.
   - Definition, role, types and how does an economy function, problem of economy.
   - Background of Indian economic environment.
   - Role of consumers in the economy of a nation.

2. Contemporary Economic Environment.
   - Introduction of Market: Meaning, definition, characteristics, types
   - Changing business environment -- Telemarkets, global, privatisation of monopolistic services, e-business and e-commerce.

3. Consumer behaviour
   - Understanding consumers and their wants
   - Determinants of consumer behaviour -- Opinion, leadership, group influence, social class and culture; consumer dissatisfaction.
   - Market strategies influencing consumer behaviour
   - Guidelines for wise purchasing practices

4. Market Practices that exploit consumers
   - Types of exploitation -- Adulteration, packaging, label, weights & measures, advertising and sale gimmicks.
- Causes of exploitation
- Consumer problems and their solutions

5. **Consumer Protection: Need and Rationale**
- History of consumer movement in India – Origin, growth, causes for slow growth
- Role of consumer organisations – National, regional and international.
- Role of government agencies, legislation
- Empowerment of consumers
- Ways of promoting consumerism.

6. **Project work by students**

**References**

ERGONOMICS

Code : 43104
Credits: T 3 P 1
Periods/Week : 5
Marks : 100

Objectives

- To become aware of the role of ergonomics in work effectiveness and efficiency.
- To understand the environmental factors contributing to productivity, safety, control and well-being of individual performing the work.

Contents

1. Ergonomics
   - Scope of ergonomics in home and other occupations.
   - Nature of work in household and other occupations.
   - Interdisciplinary and applied nature of ergonomics as a field of study.
   - Man-Machine-Environment system.

2. Physiological Aspects of Work
   - Structure and Function of the muscles.
   - Biochemistry of muscle work.
   - Physiological factors involved in muscular work.
     - Carbohydrates, fats & proteins
     - Oxygen
     - Cardio-vascular and respiratory system
     - Thermo-regulatory system
   - Sources of energy for muscular work
     - ATP, Energy currency
     - CP, Energy reserve
     - Food, carbohydrates, fats & proteins
   - Static and dynamic muscular effort
   - Energy requirement for muscular work and efficiency
   - Energy expenditure for different activities.
- Endurance and muscular strength
  ● Dynamometer
  ● Skill
  ● Maximal work
  ● Speed
  ● Factors affecting physiological reactions doing work
  ● Workload and Posture

3. Anthropometry and Biomechanics
   - Definition, scope
   - Human body as a system of levers
   - Identification and analysis of postures
   - Effect of wrong postures on cardio-vascular and muscular skeletal system.
   - Correct techniques of lifting and carrying weights
   - Principles of motion economy
   - Design application of Anthropometry
   - Work centres
   - Equipments and Tools
   - Other items of concern/protective use.

4. Environment
   - Physical
   - Heat
     ● Thermal regulation of the body at rest and during work
     ● Thermal balance
     ● Factors responsible for exchange of heat between body and surrounding environment.
     ● Heat stress
     ● Thermal comfort
   - Noise–Music
     ● Effect of noise, music on productivity and well-being
   - Vibrations and its effect on body parts during work with vibrating tools
   - Lighting and Colour
   - Atmospheric Pollution
   - Psycho-social Environment

5. Engineering Psychology
   - Man-machine system
   - Behavioural and Motivational Factors

6. Ergonomic consideration for the physically challenged
Practicals

1. Use of instruments employed in ergonomics research
   - Treadmill, step-stool
   - Heart rate monitor, Oxylog, ECG, Lung function test.
   - Noise level meter, thermal, environment kit, illuminometer.
   - Skin thermometer
   - Midget impinger
   - Sphygmomanometer
   - Height & weight measuring instruments
   - Heart rate and oxygen consumption
   - Stop watch

2. Determination of workload using heart rate and oxygen consumption
   - Treadmill
   - Bicycle ergometer
   - Step stool

3. Determination of workload of some selected household activities by using
   - Pulse rate techniques
   - Time and motion study
   - Physiological cost
   - Energy cost
   - Cardiac cost
   - Temporal cost

4. Postures
   - Identifying the types of postures assumed by women during work, analysis &
     interpretation to risks.

5. Determination of jobs, stress and work by survey of a few selected families.

6. Assessment of heat stress & interpretation of results
   - Outdoor, Indoor, Kitchen

7. Measurement of noise using noise level meter for various situation in home, office,
   traffic situation.

8. Determination of some selected body dimensions using anthropometry kit,
   statistical analysis of the data and interpretation of findings.

9. Determining the relationship of anthropometric dimensions of workers with space
   requirements for some selected activities. E.g. cooking chopping, grinding on
   platform.

References

12. Steidle and Braton : Work in Home.
STATISTICS & COMPUTER APPLICATIONS

Code: 40101
Credits: T 2 P 1
Periods/Week: 4
Marks: 75

Objectives

● To understand the role of statistics and computer applications in research
● To apply statistical techniques to research data for analysing and interpreting data meaningfully.

Note: Students should be given hands-on experiences to use appropriate software packages for selected statistical analyses.

Contents

1. Conceptual understanding of statistical measures. Classification and tabulation of data. Measurement of central tendency, measures of variation
2. Frequency distribution, histogram, frequency, polygons, Oliver.
3. Binomial distribution
4. Normal distribution – Use of normal probability tables
5. Parametric and non-parametric tests.
6. Testing of hypothesis. Type I and Type II errors. Levels of significance
7. Chi-square test: Goodness of fit. Independence of attributes 2x2 and r x c contingency table
9. Correlation, coefficient of correlation, rank correlation
10. Regression and prediction
12. Experimental Designs
   a. completely randomized design
   b. randomized block design
   c. Latin square design
   d. factorial design
   e. trend analysis
References

2. Edwards: Experimental Design in Psychological Research.
4. SPSS/PC for the IBM PC/XT, SPSS Inc.
COMMUNICATION TECHNOLOGY

Code: 43105
Credits: T 0 P 2
Periods/week: 4
Marks: 50

Objectives

- To develop understanding regarding the vital aspects of communication and various Audio and visual media and their use.
- To develop understanding regarding the new communication technologies and their use.
- To develop skills in developing and using different communication technologies for various presentations.

Contents

1. Concept of communication. Scope of communication, communication process, approaches to communication.
2. Different media, their characteristics and use.
3. Use of video projector, slide/filmstrip projector computers.
4. Introduction to new communication technologies.
   - Satellite distribution and broadcast networking.
   - Developing close circuit television package on (cCTV) topics.
   - Incorporating the use of video films in presentation i.e. the selected clippings.
   - Slides: Making use of slides with audio commentaries for presentations.
   - Development and use of transparencies.
   - Digital method of communication.
   - Computer Graphic Designing.
5. Preparation of graphics for research reports/seminars/other presentation.
7. Presentations using power points.

References

ENVIRONMENT MANAGEMENT

Code: 43106
Credits: T 4 P 0
Periods/ Week: 4
Marks: 100

Objectives

- To be aware of the holistic ecological approaches to environment.
- To be aware of the environmental problems, hazards and risks.
- To understand the aspects of environmental pollution and waste management.
- To be aware of the environmental policies, movements and ethics.

Contents

1. Fundamentals of environment
   - Environment definition. Scope of environment studies.
   - Life and the environment. Physico-chemical factors in the environment, changes in the environment – anthropogenic and non-anthropogenic
   - Environmental hazards and risks
   - Natural resources – conservation and sustainable development

2. Eco-system – Earth, Man and Environment
   - Ecosystems of the world
   - Forest ecology
   - Pathways in ecosystem
   - Environment implications of energy use
   - Problems of sustainability of ecosystems

3. Population and Environment
   - Carrying capacity: Limits to population growth.
   - Population growth and natural resources
   - Impact of population growth on economic development and environment

4. Land and Water Resources of the Earth
   - Land resources of the earth
   - Land use
   - Water resource of the earth
5. Factors affecting changes in ecosystem and environment (Socio, economic, cultural and geographic)

6. Pollution and Environment with reference to Air, Water, Soil, Noise
   - Sources of pollution
   - Effects of pollution
   - Remedies to control pollution

7. Environment and Public Health
   - Environmental pollution and community health
   - Water borne diseases
   - Air borne diseases
   - Chemical insecticides and its impact on health
   - Toxic actions of metals and biological substances

8. Waste Management
   - Types of waste
   - Methods of waste management
   - Water pollution and treatment of waste
   - Solid waste management
   - Air pollution control technology

9. Environmental Control Measurement
   - Environmental legislation
   - Environmental policies
   - Human rights issues relating to environment
   - Environment movements
   - Environmental ethics
   - Women and Environment

10. Role of local municipal authority, government and non-governmental agencies in promoting better health environment.

References

ENTREPRENEURSHIP MANAGEMENT

Code : 43107
Credits: T 3 P 0
Periods/Week : 3
Marks : 75

Objectives

- To provide conceptual inputs regarding entrepreneurship management.
- To sensitise and motivate the students towards entrepreneurship management.
- To orient and impart knowledge towards identifying and implementing entrepreneurship opportunities.
- To develop management skills for entrepreneurship management.

Contents:

1. Conceptual Framework
   - Concept, need and process in entrepreneurship development.
   - Role of enterprise in national and global economy
   - Types of enterprise – Merits and Demerits
   - Government policies and schemes for enterprise development
   - Institutional support in enterprise development and management

2. The Entrepreneur
   - Entrepreneurial motivation – dynamics of motivation.
   - Entrepreneurial competency – Concepts.
   - Developing Entrepreneurial competencies – requirements and understanding the process of entrepreneurship development, self awareness, interpersonal skills, creativity, assertiveness, achievement, factors affecting entrepreneur’s role.

3. Launching and organising an enterprise
   - Environment scanning – information, sources, schemes of assistance, problems.
   - Enterprise selection, market assessment, enterprise feasibility study, SWOT Analysis.
   - Resource mobilisation – finance, technology, raw material, site and manpower.
   - Costing and marketing management and quality control.
   - Feedback, monitoring and evaluation.
4. **Growth Strategies**
   - Performance appraisal and assessment
   - Profitability and control measures, demands and challenges
   - Need for diversification

5. **Enterprise Networking**
   - Concept and dynamics
   - Methods
   - Joint venture, co-ordination and feasibility study

6. **Project Work – Planning, resource mobilisation and implementation.**

7. **Preparing project proposal to start on new enterprise and feasibility report.**

**References**

HOUSING FOR FAMILY LIVING

Code: 43108
Credits: T 3 P 1
Periods/Week: 5
Marks: 75

Objectives

- To enable the students to
  - Recognise the role of housing for national development
  - Be aware of the housing problems in India and the measures for alleviating the problems.
  - Understand and apply the principles of design in housing.

Contents

1. History of housing
   Changes in housing needs and standards.

2. Housing in India as affected by trends in
   - Population
   - Establishments of households
   - Levels of income per households
   - Occupation
   - Family mobility
   - Technological development

3. Present housing condition in India.
   - Rural and Urban
   - Cost of housing
   - Availability of building material
   - Quality of housing available
   - Quantity of housing available
   - Housing management problem

4. Factors affecting housing
   Social, cultural, demographic, climatic etc.
5. **Approaches to housing**
Housing as an element in the socio-economic development problem

6. **Private and Public housing**
Various housing schemes: Central and Local government programs, Industrial housing,

7. **Housing Standards and Housing Legislation**
Building Codes
Floor Space Index
Technical aspects of house design with reference to principles of planning.

8. **Residential architectural design for various life styles.**

9. **Cost of housing design**
Estimating and Costing in relation to land price and construction
Factors influencing cost, Sources of financial assistance.

10. **Analysis of housing design.**
Analysis of plans
Materials and Construction techniques
Study of the different housing designs

11. **Essential Services**
Types of Services
Water supply, drainage, electricity, telephone etc.

12. **Housing Research**
Agencies for Research and Development
Methods and Techniques

**Practicals**

1. Floor Plan Evaluation.
2. Drawing House Plans for various Income Groups.
3. Study of housing conditions, building materials and Technology.

**References**

7. Publication of Housing Boards, NBO, ISI, HUCPO etc.
MANAGEMENT OF HUMAN RESOURCES

Code : 53109  
Credits: T 3 P 0  
Periods/Week: 3  
Marks : 75

Objectives

- To increase awareness of human beings as resource potentials in attaining goals of family life and as an important national resource.
- To acquire ability to use scientific facts and principles for decisions related to use of time and energy.
- To develop the ability to use and evaluate, to improve human resources.
- To recognise the need for further research in practical life in relation to use of human resources.

Contents

2. Efficiency in use of human resources.
   - Concept of Efficiencies vs. effectiveness.
   - Factors affecting Efficiency & Effectiveness.
3. Motivation vs. Productivity
4. Fatigue and impairment in man
   - Physiological
   - Psychological
5. Methods of Research in new resources
6. Methods and techniques for improving resource use
   - Questioning approach
   - Development of labour saving device
   - Improvement of working conditions
   - Changing of attitudes
   - Development of efficient work methods.
7. Training for personality development and leadership.
8. Action Problems
References

RESIDENTIAL INTERIOR SPACE DESIGN

Code: 53110
Credits: T 2 P 4
Periods/Week: 10
Marks: 150

Elective

Objectives

- To understand the factors influencing space design organization for optimum comfort and functionalism.
- To understand the application of anthropometric data in designing interior.
- To evaluate ergonomically residential interior space for various activities.
- To provide adequate facility for work, relaxation, rest, comfort, privacy, care, aesthetics etc. through interior space designing.
- To study the materials along with fittings and fixtures used in residential interiors.
- To develop skills of drawing the working details and execution drawings.

Contents

1. In-depth understanding of residential interior space design from design point of view.
2. Study of factors influencing furnishing of residential interior spaces.
3. Factors to be considered while designing.
   - Orientation.
   - Grouping of user’s area.
   - Circulation between and within user’s area.
   - Light and ventilation.
   - Flexibility.
   - Privacy.
   - Roominess (Spaciousness).
   - Services.
   - Aesthetics.
   - Cost.
4. Basics of furniture design and types of furniture design.
6. **Consideration of ergonomics in interior design.**
   - Importance of ergonomics in interior design.
   - Work, worker and working environment relationship.
   - Kitchen and storage as most important work area.
   - Ergonomical evaluation for health and safety of user in residential space design.
   - Study of different body postures used in different activities and its relation to fatigue.

7. **Application of appropriate materials for various uses.**

8. **Study of various types of fixtures and fittings used in interiors. their uses, selection and care.**
   - Use of timber for different purposes with their joints.
   - Types of floor.
   - Various ways of operating shutters.
   - Methods of paneling and cladding to walls.
   - False ceilings – different types in various materials.
   - Mezzanine and lofts.
   - Kitchen platform.
   - Residential furniture items: sketch, form and sizes of all and details of only 6 items. Such as sofa, diwan, chairs, puffe, centre table, wall unit, dining table, side board, kitchen unit, bed, wardrobe, dressing table etc.

**Practicals**

1. Interior Design Scheme – Residential space: including other related drawings to furniture fixtures. The scheme based on ergonomic and anthropometric data.

2. **Working drawings**
   1. Construction of various furniture units.
   2. Analysis rate of certain items like stool, table etc.
   3. Taking quantities and preparation of abstracts for one interior area.
   4. Rendering techniques with different media.
   5. Drawing sketches – two dimensional and three dimensional.
   7. Colour schemes.

**References**

13. Encyclopaedia of Interior Design
LANDSCAPING

Code: 53111
Credits: T 1 P 2
Periods/Week : 5
Marks: 75

Elective

Objectives

• To study and to understand the Landscape designing and its appropriate application.
• To get familiar with the various materials related to landscaping.

Contents

1. Introduction of Landscaping from Interior Space design Point of view.
2. Historical references of Landscape.
3. Location & Orientation.
5. Land profile.
7. Availability of Water Sources.
8. Understanding of various materials for paving, walk way etc. (stone masonry, Brick masonry)
9. Fencing, to entrance gate and other gates.
10. Tree guards sit-outs.
11. Open frame sheds for semi- shady plants.
14. Pedestals, monuments, statues, abstract etc.
15. Pargoles in various materials.
16. Study of Indoor & Outdoor plant species. (Natural/Artificial).
17. Variety of Shrubs, Creepers, grass etc. (Natural/Artificial).
18. Drainage
   a. Storm water drains
   b. Troughs Potted Plants
c. Rain water from terrace
d. Waterproofing & checking the strength of terrace slab for terrace garden

19. **Water Bodies**
a. Natural & Artificial

20. **Garden furniture**

**Practicals**

Designing of Terrace Garden.
Designing of partly outdoor & Indoor Landscaping

**References**

3. Taschen – Garden Architecture in Europe – ISBN.
COMMERCIAL INTERIOR SPACE DESIGN

Code: 53112
Credits: T 2 P 4
Periods/Week: 10
Marks: 150

Elective

Objectives

- To develop the skill in visualizing and designing spaces of commercial interiors considering the principles of design, anthropometric data and ergonomic criteria.
- To understand the criteria for selection of appropriate materials for different surfaces taking into consideration of ergonomic factors, aesthetics and cost.

Contents

1. Study of commercial interior design with the perception of purpose, function and aesthetics.
2. Current trends in interior design, and architecture.
3. Planning of interiors of commercial spaces with considerations of functions, orientation, grouping/section of areas, circulation, light, ventilation, privacy services, aesthetics ergonomical considerations and cost.
   - Designing of different types of commercial interior spaces within the layout, sectional elevations and perspectives.
   - Study of furniture and designing of furniture for commercial spaces.
5. Materials and finishes:
6. Responsibilities of the Designer with the client

Practicals

Interior design scheme for commercial space:
   a. Visualisation of the design for commercial interiors.
   b. Layout of smaller and bigger commercial areas.
c. Working drawings – sectional elevation and perspectives.
d. Detailing of furniture – constructional details of furniture, panelling, false ceiling, mezzanine lofts, partitions.
e. Analysis of rates/costing.
f. Rendering techniques colour – schemes – using different media.
g. Model making for different commercial interiors including flat models.
h. Taking of quantities and preparation of abstracts for any one of the above.

References
SERVICES - RESIDENCES & ESTABLISHMENTS

Code: 53113
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives
- To familiarise the students with the various services in residences and other establishments.
- To analyse the services with respect to design cost and maintenance.

Contents
1. Water Supply System
   - Water supply system to commercial and residential buildings
   - Water tanks, water pipes, traps used in water supply system, taps, stop cocks (dimensions, sizes, material etc.).
   - Laying and fixing of water supply pipes.
   - Water supply to bathroom, toilet, W.C. and kitchen.
   - Bye-laws related to water supply.
2. Drainage System
   - Types of drainage layout
     i. Drainage system - with municipal drain lines.
     ii. Drainage system using septic tank and soak pit.
   - Types of drain pipes - dimensions, material etc.
     i. Types of traps used in drainage system.
   - Drainage - bye laws.
3. Electrical layout and wiring systems
   - Types of wires and conduits.
   - Wiring systems - wiring for fans and tube lights
     - Wiring for television.
     - Wiring for telephone.
     - Wiring for domestic appliances.
- Types of lamps and light fixtures.
- Bye-laws related to electricity

4. **Special Service**
   - Types of air conditioning.
   - Air conditioning ducting layout.

5. **Fire Fighting**
   - Fixtures and fittings.
   - Fire fighting layouts.
   - Fire fighting bye-laws.

6. **Acoustics**
   - Acoustic materials.

7. **Garbage Disposal**
   - Vermi Composting.
   - Vermi Culture.
   - Garbage disposal for multi storied building.

8. **Inter Communication System**
   - Techniques of inter communication system.

**Practicals**

1. Study of water supply system, drainage system and electrical layouts.
2. Preparation and maintenance of compost pits for garbage disposal – vermiculture.
3. Layout for inter-communication system.

**References**

PROFESSIONAL MANAGEMENT

Code: 53114
Credits: T 2 P 1
Periods/Week: 4
Marks: 75

Objectives

- To understand the professional code of management in interior design.
- To maintain internal and cost aspects of professional management.

Contents

1. Introduction to professional Management,
2. Management concept,
3. Internal Aspects of professional Management.
   - Office Management,
   - Code/Conduct.
   - Scale of professional fees and charges.
   - Some of the accounting terms.
   - Duties of employees under the labour welfare provision.
   - Structure of an Interior Designer’s office.
   - Conditions of Engagement.
4. Estimating cost
   - Definition.
   - Importance of estimating.
   - Types of estimating
     i. Rough order of Magnitude of cost.
     ii. Area basis.
     iii. Cubic content basis.
     iv. Detailed item wise estimation.
     v. Unit basis.
   - Units and Mode of Measurements.
   - Rate Analysis.
- Taking of quantities.
- Bills of quantities (Schedule of items) with brief specification.

5) **Tenders**
   a. Definition
   b. Tender Notice
   c. Tender Document
   d. Types of Tenders
   e. Earnest Money
   f. Security Deposit
   g. Retention Amount

6. **Contract**
   - General Principles,
     - What is contract - Execution of contract
     - When contract becomes void - Discharge of contract.
   - Types of contracts.
   - Articles of Agreement & the Appendix,
   - Definition and scope of some of the terms
   - Scope of contract,
   - Decorator's (Contractor's) duties and liabilities under the contract.
   - Designer's duties and liabilities under contract.

7. **Duties and liabilities in profession.**
8. **Professional relation with clients and contractors.**

**Practicals**
1. Case studies of entrepreneurs.
2. Field visits
3. Formulation of entrepreneurship project
4. Preparation of tenders

**References**
CONSUMER ECONOMICS

Code: 53115
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Elective

Objectives

- To familiarize the students with the changing economic environment and the rising consumerism.
- To develop an understanding of the marketing system and marketing strategies keeping in view the consumers.
- To know the techniques of consumer decision making and the aids for wise decision making.

Contents

1. Consumer and the Indian economic environment
   - Definition of a consumer
   - Characteristics of consumers
   - Role of consumers in the economy

2. Economic system
   - Purpose
   - Types of economic system
   - Indian economy-Characteristics

3. Markets & Marketing
   - Basic concept of Markets and Marketing
   - Classifications and functions of markets
   - Types of markets- wholesale, retail, specialty, local, residential and tele markets, national, global etc.
   - Changing nature of the business world i.e. e-business and e commerce.
   - Marketing environment, marketing theories, models
   - Marketing strategies-concept and types based on product, seller, demand, media mix, price, promotion and policy.
4. Theories of Consumer Behaviour
   - Utility solution
   - Indifference curves
   - Morris Katona Theory
   - Vector Analysis

5. Consumer buying habits and buying motives.
   - Convenience goods, shopping goods and specialty goods
   - Buying motives-primary, selective, rational, emotional patronage.

6. Business cycle
   - Monetary theories of business cycle
   - Non monetary theories of business cycle
   - Implications for consumption

7. Markets and Prices
   - Definition and types of markets, Prices
   - Pricing under perfect and imperfect competition and monopoly.

8. Consumer credit
   - Definitions and types of credit
   - Factors affecting consumer credit decisions
   - Sources of consumer credit

9. Channels of Distribution
   - Meaning and types of channels of distribution
   - Advantages and disadvantages of types of channels
   - Factors considered in the selection of the channels

10. Consumer decision making process
    - Types of consumer decisions-habitual, limited and extended, short and long term.
    - Process of decision making, factors determining and influencing consumer behavior, perception, learning, memory, motivation, personality attitude.
    - External cultural, demographic, environmental, product positioning.
    - Guides for wise buying practices.

11. Consumer and Institutional Finance
    - Consumer credit-needs, usage and sources
    - Savings and investments
    - Credit rating agencies
    - Personal finance management.

References
ADVERTISING AND MARKETING

Code: 53116  
Credits: T 3  
Periods/Week: 3  
Marks: 75  

Elective

Objectives

- To become aware of different market organisations in our economy.
- To understand the different, marketing functions and the distribution system in our economy.
- To familiarise with the marketing strategies and market research
- To understand the role of advertising in sales promotion

Contents

1. Market Economy
   - Markets, marketing, marketing functions
   - Marketing environment

2. Strategic Planning and marketing information, steps in marketing process
   - Analysing the environment
   - Marketing information system
   - Planning marketing strategy
   - Role and types of marketing research.

3. Market segmentation
   - Major markets - Consumer and organisational
   - The process of market segmentation
   - Segmentation strategies.

4. Product development and forecasting
   - Developing, testing and launching new products
   - Idea generation, screening and business analysis
   - Understanding market demand and consumer adoption process
   - Labelling and packaging
   - Estimating current and future demands
   - Stages in product life cycle
5. **Pricing practices and consumer interest pricing. stamping on packages.**

6. **Advertising and Sales promotion**
   - Advertising objectives, functions, benefits
   - Advertising budget and costs of sales promotion
   - Types of advertising
   - Advertising claims
   - Evaluating of advertising effectiveness
   - Advertising legislation
   - Ethics and self-regulation

7. **Personal selling and sales management**
   - Characteristics and importance
   - Creative selling process.
   - Organising sales force, training personnel.
   - Motivation, evaluation and control of sales force.

8. **Sales promotion and Public relations**
   - Nature and growth of direct marketing
   - Designing a sales promotion programmes

9. **Evaluating and Controlling market performance**
   - Sales analysis
   - Market share and financial analysis
   - Customer satisfaction index
   - Impact of technology on marketing.
   - Global marketing.

10. **Service marketing**
    - Marketing strategies
    - Maintaining quality in services.

**References**


HOUSING EQUIPMENT

Code: 53117
Credits: T 3 P 2
Periods/week: 7
Marks: 125

Objectives

- To understand the recent developments in household equipment design and technology
- To study the construction and finishes in various appliances
- To understand the installation, operating, servicing and replacement of parts of various equipments
- To recognise the importance of standards and its benefits.
- To acquire the proficiency in testing of various equipment (electrical and non-electrical)

Contents

Theory

1. a. Basics of electricity
   - Power source, voltage, resistance, current.
   - Series/parallel circuits
   - AC/DC sources

b. Electrical materials
   - conductors
   - semi conductors
   - insulators

2. Classification of appliances
   - Class I, II & III appliances

3. Basic components in an Appliance
   - mains cord
   - switches - power/mode/speed selection
   - plugs and sockets
   - controls – thermostats
   - interlock
light bulbs
indicators-incandescent/neon/LCD
heating elements
solenoids - resistors/capacitor/diodes.
small electronic components
Motors -universal/induction/DC/ timing.
Fans and blowers - bladed/centrifugal
Bearing & Bushings
Mechanical controllers - Time motors/cam switches.
Electronic controllers - simple delay microprocessor based.
Batteries - Alkaline/lithium/lead acid etc.
AC adapters/charges.

4. **Product testing for quality.**
   a. Need for testing
      Institutions offering test facilities –
      BIS, IDEMI, RTC, ERTL, PTH, NTH Etc.
   b. Types of test - safety test, environmental/ test physical test/Electrical endurance and performance test.
   c. Equipments required for testing of electrical appliances.

5. **Safety against household appliances**
   a. Definition of safety
      "safety technology"
      classification of safety – Inherent technical safety, Operational safety/ Actual safety.
   b. Electrical shock and its prevention.
      What is an electric shock
      potential sources of electrical shock
      causes of electrical shocks
      Factors determining the severity of electric shock.
      Protection against electric shock.

6. **Laws and regulations governing appliances**
      The electrical wires; cables appliances and accessories (Quality control) Order 1993.
      Essential commodities act of 1955
      Consumer protection act.
      Indian Electricity Act -
   b. CE and BIS marking
      Meaning of CE marking and its importance.
      Certificate Board scheme – its meaning and importance.
Standards on electrical appliances.
BIS marking scheme.
c. Errors in measurement:
   Gross error, systematic error, random error.
d. Calibration and its need -

7. a. Recent developments and new technology in household equipment.
b. Evaluation of electrical and motor appliances in terms of speed, control, performance, time and energy saving features, noise produced etc.

Practical

Objectives

1. To offer students practical knowledge of testing household appliances as per ISI standards.
2. To gain knowledge of different non electrical household appliances.

1. Testing of Electric iron as per the 15i366:1993 Tests:
   ● Input test
   ● Insulation and leakage current test.
   ● Measurement of heating up time
   ● Measurement of temperature distribution
   ● Measurement of over swing temperature and heating up excess.
   ● Measurement of cyclic fluctuation
   ● Temperature of different fabric setting
   ● Earthing provision test.

2. Testing of Electric Toaster as per the IS 2 1287 s 1986
   ● Input test
   ● Insulation and leakage current test
   ● High voltage test
   ● Temperature rise test
   ● Performance test

3. Testing of Electric Kettle as per the IS 2 367 » 1979
   ● Input test
   ● Insulation and leakage current test
   ● High voltage test
   ● Measurement of heating up time
   ● Measurement of thermal efficiency
4. Testing of Electric Oven as per the IS 5790 i 1985
   • Input test
   • Insulation and leakage current test
   • High voltage test
   • Performance test

5. Testing Electric Water Heater as per the IS 28978 » 1983
   • Input test
   • Insulation and leakage current test
   • High voltage test
   • Temperature rise test
   • Earthing connection test

6. Testing of Room Heater as per the IS < 4159 x 1983
   • Input test
   • Insulation and leakage current test
   • High voltage test
   • Earthing provision test.

7. Testing of Electric Immersion Water Heater as per the IS 368 x11979
   • Input test
   • Insulation and leakage current test
   • High voltage test
   • Earthing connection test

8. Testing of Electric Food Mixers as per the IS ; 4250:1989
   • Starting test.
   • Input test
   • Insulation and leakage current test
   • High voltage test
   • Performance test

9. Testing of Domestic Washing Machine as per the IS $ 6390 s 1983
   • Starting test
   • Input test
   • Insulation and leakage current test
   • High voltage test
   • Performance test

10. Testing of Vacuum Cleaner as per the IS :
    • Input test
    • Insulation and leakage current test
    • High voltage test
    • performance test
11. Testing of Electric Hair Dryer as per the IS: 7154 i 1973
   • Input test
   • Insulation and leakage current test
   • High voltage test
   • Performance test

12. Testing of Domestic Refrigerator as per the IS: 1476: 1979
   • Door seal test
   • Input test
   • Insulation and leakage current test
   • Performance test

13. Testing of Pressure cooker as per the IS: 2347: 1974
   • Capacity test
   • Operational test
   • Performance test
   • Safety test

14. Case Study of any one of the non electrical household appliances ~ Solar Cooker, Water Purifier, Gas Stove, Smokeless Chullah etc.

References

FUEL TECHNOLOGY AND ENERGY MANAGEMENT

Code: 53118
Credits: T 3 P 0
Periods/Week – 3
Marks: 75

Objectives

- To understand the potential and limitations of different energy sources and the environmental impacts of their use.
- To understand the need and the ways of energy conservation.
- To study the innovations in fuel technology and energy management.

Contents

1. Sources of energy and their classifications, non-renewable vs renewable, alternative, conventional vs non-conventional, commercial vs non-commercial
2. Energy consumption pattern – national statistics.
3. Fossil fuels and thermal power
   - Fossil Fuels – The theories of their formation and their chemical composition. Coal, petroleum and natural gas – the extents of their reserves.
   - Solid, liquid and gaseous fuels which can be derived from coal and the processes involved in their preparation.
   - Calorific values of fuels and their determination
   - Principles and methods of energy conversion
   - Thermal power plants
5. Hydel Power: The production of hydroelectric power. The potentials, limitations and the adverse environmental/ecological impacts of large hydel power projects. Mini/micro hydel projects.
desalination, power generation etc. Principles and applications of photovoltaic conversion, future trends, Solar salt ponds.


8. **Energy Conservation**
   - Principles of improving the efficiencies of 1) combustion, 2) heat exchange, 3) energy conservation, 4) waste heat recovery and utilisation etc.
   - Proper use and maintenance’s of domestic heating, cooking, lighting and other appliances.
   - Energy conservation in the transport sector.

**References**

ORGANISATIONAL THEORIES, STRUCTURES AND DESIGN

Code: 53119
Credits: T 3 P 0
Periods/Week – 3
Marks: 75

Objectives

- To understand the different organisational theories.
- To understand the role of organisation structure in changing business environment.

Contents

1. Organisation structure and their impacts
2. Assessing the existing organisation structure and its effectiveness in selected organisation
3. Determinants of structure
5. Human Relationship and Dynamics in Organisational systems.
6. Organisational Theories and their critical evaluation
7. Understanding of organisation structure and design
8. Power and Authority

Reference

HUMAN RESOURCE DEVELOPMENT

Code: 53120
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives

- To understand the various methods and techniques of human resource planning and human resource audit.
- To analyse factors for optimum manpower development.

Contents

1. Manpower planning
2. Setting manpower standard
3. Manpower forecasting for management staff
4. Skilled labour
5. Integrated budget for manpower planning
6. System and analysis approach to manpower management
7. Controlling manpower costs
8. Quantitative and qualitative approaches to manpower economy
9. Auditing of human resource for optimum utilisation and organisational profitability growth and productivity.

References

CONSUMER ERGONOMICS

Code: 53121
Credits: T 1 P 2
Periods/Week: 5
Marks: 75

Objectives

- To familiarise with the procedures for measuring physiological costs.
- To understand the importance of ergonomics in designing work stations and household equipment to ascertain productivity, safety and well-being of consumers.
- To measure the environmental parameters related to ergonomics.

Contents

1. Physiological costs of work.
2. Anthropometric measurements related to work station design and household equipment design.
3. Ergonomical principles used in designing of household equipment.
4. Postures at work and their effect on health.
5. Workload during operation of various tasks.
6. Designing of signage system, transport, commercial educational and residential sectors.
7. Designing of housing with special consideration of ergonomic principles.
8. Designing of household equipment with special consideration of ergonomic principles.
9. Designing of work station in residences and commercial establishments.
10. Designing of furniture
11. Safety factors in designing work areas and equipment and circulation areas.
12. Environmental factors, heat, illumination, noise etc.
13. Study and evaluation of work station for various occupations with reference to physiological costs, psychological considerations and anthropometric measurements.
14. Ergonomic designs for physically challenged.

References

HOSPITALITY ADMINISTRATION

Code: 53122
Credits: T 3 P 0
Periods/Week: 3
Marks: 75

Objectives

- To acquaint the students with housekeeping department and its management in the hospitality industry.
- To enable students to manage resources in the housekeeping department to fulfill the hospitality function.

Contents

1. Types of institutions offering hospitality services
2. Hospitality functions
   - Role of housekeeping in hospitality industry
   - Housekeeping in relation to commercial and welfare section.
3. Management of housekeeping department
   - Layout of housekeeping department
   - Planning, organisation and communication of housekeeping activities
   - Coordination with other departments
   - Roles/ responsibilities of personnel in the housekeeping department
4. Administrative Policies
   - Personnel management: Recruitment training, handling personnel promotion, evaluation, distribution of jobs, job schedules, job analysis
   - Procurement policies, buying techniques, stores, stock control.
   - Cost control: inventory management, budget process, controlling expenses
   - Safety, security and sanitation: safety, fire fighting, first aid safety in equipment use, pest control, sanitation standard.
   - Uniforms, types selection, distribution and control
5. Hostess training
6. Banquet management
7. **Energy and Water management:** Power requirements, flushing system, water control taps, waste water circulation.

8. **Communication system:** Public address system, intercom system, music and television.

9. **Maintenance:** Repairs and redecoration programmes.

**References**


10. Ursula Jones and Newtons: Hospitality and Catering.
CONSUMER INFORMATION AND REDRESSAL

Code: 53123
Credits: T 2 P 0
Periods/Week: 2
Marks: 50

Objectives

- To equip and impart knowledge on consumer related facts and issues.
- To provide an understanding of the significance of consumer information
- To develop and acquire skills in consumerism and utilizing the provisions in redressal mechanism.

Contents

1. Consumer Movement
   - Origin and growth
   - Philosophy, objectives
   - Consumer movement in developed countries and global experience – a brief overview.
   - Indian experience, reasons for slack in consumer movement. Future of consumer movement in India.

2. Consumer Protection
   - Legal problems in buying and paying for goods and services.
   - Consumer representation – Govt. Agencies, consumer organisations, legal cells in industries, public interest legislation.
   - Quality control and standardisation – national and global

3. Consumer Information
   - Need and significance
   - Sources
   - Consumer services – Public and Private – Merits and limitations.
   - Institutional support – Corporate accountability, Government policies and responsibilities
   - Do’s and Don’t’s towards better consumerism.
4. **Consumer Redressal**
   - Definitions of consumer, complaint, complaint service, unfair trade practices as given in CPA.
   - Procedure for filing a complaint appeal to district, state and national commissions.
   - Some tips for ensuring redressal.

5. **Alternative redressal mechanism for consumer grievances.**
   - Verbal and written complaints
   - Media connected services
   - Third party assistance – Arbitrator, ombudsman
   - Institutional assistance
   - Lok Adalats
   - Public interest litigation
   - Government and other agencies

6. **Project and research in consumer affairs – Visit to consumer redressal forums.**

**References**

COMPUTER AIDED DESIGN AND PRESENTATION

Code: 53124  
Credits: 2 P 2  
Periods/Week: 6  
Marks: 100

Objectives
- To develop skill of drawing, designing and presentation of interior space with computer.
- To develop skill of detailing for execution/drawing.

Contents
1. Getting started with AUTOCAD/Understanding the Interface, Drawing screen structure of AUTO CAD, Coordinate system involved in AUTO CAD.
2. Practical
3. Coordinate system involved in AUTOCAD, pointing Devices, Menu Areas in AUTO CAD, Command entry. Data entry techniques set up for a drawing.
5. Practical
7. Entity grips, Corner rounding and chamfering. Opening drawings, Filling AUTOCAD information, units 7 scales. Drawing limits & Sheet sizes.
8. Practical
11. Practical
13. Variables controlling dimensions.
14. Practical
16. Practical
18. Practical
20. Practical
23. Practical
25. Practical
27. Practical
28. Multiple Scales in drawing. Creation of line types and hatch patterns, Menu creation, DIESEL expression in menu areas. Multiple Lines AutoCAD, Styles, Creation, Editing, Spline information in Auto cad, Importing text files.
29. Practical
30. Plotting and scanning technology, plotting/Printing of drawing information. Installation and configuration of AutoCAD, Use of prototype drawing. Using an existing drawing as Prototype.
31. Practical
32. Tips for productivity.
33. Written test.
34. 2D drawing Project,
   3D Modeling:
   TYPES OF 3D MODELS, 3D modeling techniques. Construction planes, Co-ordinate
   system icon. Fixing a point in 3D.
35. Drawing objects in 3d, Wire frame, Surface, Solid, Setting up a 3d display. Multiple Views
   of a 3d model, Setting up Elevation and thickness.
36. Practical
37. 3D surfaces. Ruled, Tabulated, revolved. Edge, Polyface mesh, User coordinate system.
   Viewing in 3d, Setting view direction, displaying the plan view. Setting views with compass
   and axis Tripod.
38. Practical
   view clipping planes. Hidden line suppression, shading, models. Geometric 3d
   Transformation.
40. Editing in 3D, Rotation, Mirroring, Arraying, 2'Imming, Extending.
41. Project 3d drawing. Surface Modeling.
42. Solid modeling concepts. Solid models. Box, Cylinder, Cone, Sphere, Tours, Wedge,
   Deriving Primitives, Revolted, Extruded, Creating Composite Solids, Boolean operations.
   Union, Subtraction Intersection, interference. Region modeling. Solid modifiers,
   Chamfering, Filleting, Sectioning, Slicing.
43. Practical
44. Inquiry commands. Area, Mass properties, Utility commands, Exporting Solids, DXF files,
   ACIS files, 3DS files.
45. Importing files, ACIS files, SAT files, 3DS files. Converting AME models to Solids, Rester
   Support GIF files, TIFF files, PCX files, Importing and exporting of Raster images. Image
   Linking, Exporting, Administering.
46. 3D Solid modeling Project
47. AUTOLISP PROGRAMMING: Introduction to programming languages, Need for a
   programming language inside AutoCAD, Advantage of AutoLISP inside AutoCAD,
   Program structure of AutoLISP.
48. Data Types, Integers, Reals, Strings, Lists, Selection sets, Entity names. File' Descriptors,
   Symbols, Variables.
49. Practical

51. Number-handling, Arithmetic, Trigonometric, Logarithmic, Sxponentia:

52. Practical


55. Handling functions and symbols. User defined Functions, Functions with or without argument. Creating new AutoCAD commands, AutoCAD calls.

56. Data Conversion, Real Integer, Number String, System Unit Confection ASCII Code conversion. Point Transformations.


58. File Descriptors, Reading, Writing and appending to/from file, Pile Search.

59. Practical, project :- Creating your Auto Lisp File.

60. Entity Handling, Entity Names, Entity handles and -their use Entity Databases, Modifying Entities, and Creating Entities.

61. Practical


63. Practical/Project

64. Final Exam, Practical & Theory.

References


CURRENT TRENDS AND ISSUES IN RESOURCE MANAGEMENT

Code: 53125  
Credits: T 2 P 0  
Periods/week: 2  
Marks: 50

Objectives

- To create awareness regarding current trends, issues and researches in various aspects of resource management, consumer studies, interior design, environment and management of families and organisation.
- To debate on various emerging areas of studies and research needs for Resource Management.

Contents

1. Socio-economic environment impact on families and organisation.
2. Consumer issues – Foreign direct investment privatisation.
6. Quality Management
7. Entrepreneurship Management
SCIENTIFIC WRITING

Code: 53126
Credits: T 2 P 0
Periods/Week: 2
Marks: 50

Objectives

- To be able to appreciate and understand importance of writing scientifically.
- To develop competence in writing and abstracting skills.
- To write either a draft research proposal or a chapter of dissertation.

Contents:

1 Scientific writing as a means of communication.
   - Different forms of scientific writing.
     - Articles in journals, Research notes and reports, Review articles, Monographs, Dissertations, Bibliographies.

2 How to formulate outlines.
   - The reasons for preparing outlines
     - as a guide for plan of writing
     - as skeleton for the manuscript
   - Kinds of outline
     - topic outlines
     - conceptual outline
     - sentence outlines
     - combination of topic and sentence outlines

3 Drafting Titles, Sub Titles, Tables, Illustrations.
   - Tables as systematic means of presenting data in rows and columns and lucid way of indicating relationships and results.
   - Formatting Tables: Title, Body stab, Stab Column, Column Head, Spanner Head, Box Head
   - Appendices: use and guidelines

4 The writing process
   - Getting started
- Use outline as a starting device
- Drafting
- Reflecting, Re-reading
  - Checking organization
  - Checking headings
  - Checking content
  - Checking clarity
  - Checking grammar
- Brevity and precision in writing
- Drafting and Re-drafting based on critical evaluation

5 Parts of Dissertation/Research report/ Article
- Introduction
- Review of Literature
- Method
- Results and Discussion
  - Ask questions related to: content, continuity, clarity, validity, internal consistency and objectivity during writing each of the above parts.

6 Writing for Grants
- Clearly state the question to be addressed
- Rationale and importance of the question being addressed
- Empirical and theoretical conceptualization
- Presenting pilot study/data
- Research proposal and time frame
- Clarity, specificity of method.
- Clear organization
- Outcome of study and its implications
- Budgeting
- Available infra-structure and recourses
- Executive summary

References


CONSUMER SAFETY – TESTING

Code: 53128
Credit: T 2 P 4
Periods/week: 10
Marks: 150

Objectives

- To sensitise the students about consumer safety
- To gain experience in conducting consumer research and product testing
- To understand and apply the techniques of analysing consumer goods for product safety and performance.

Contents

Theory

1. Products and Services available to consumers.
   a. Products – Types, design requirements, quality requirements, performance appraisals; after sale services.
   b. Services – types, qualitative assessment techniques.
   c. Consumer safety, hazards and liabilities with reference to all consumer goods and services.
   d. Warrantees, guarantees and sales contracts
   e. Consumer, research and product safety, environmental effects.

2. Quality Control and Standardisation for:
   a. Food
   b. Textiles
   c. Consumer durable
   d. Building materials

3. Food Testing
   a. Sensory evaluation
   b. Qualitative tests to detect common adulterations in milk and milk products, fats and oils, spices and condiments, tea, coffee etc.

4. Textile Testing
   a. Fibre identification
a. Tests for serviceability, wear and abrasion; colour fastness, fabric dimensions and fiber contents.

5. **Equipment Testing**
   a. Testing of electrical appliances

6. **Study of base materials used in consumer goods – characteristics, toxic effects of some metals and finishes.**

7. **Drugs and Medicines**
   a. Drug control act – Provisions and applications
   c. Precautions to be observed during purchase, use and storage.
   c. Toxic and side effects of some commonly used drugs.

**Practicals**

1. Sensory evaluation/organoleptic examination of different food products.
2. Qualitative analysis of foods to detect common adulterants.
3. Qualitative estimates to assess the quality of different food products.
4. Testing of Textile fibers – for fiber identification, and tensile strength
5. Evaluation of some common consumer durable for performance and efficacy
6. Study of labels of consumer goods for safety, instructions for care and maintenance, quality marks etc.
7. Study of building materials and cosmetics for harmful adulterants.

**References**

4. Test ISI Booklets on Textiles, Appliance and Food Material.
CONSUMER EDUCATION

Code: 53129  
Credit: T 3 P 0  
Periods/week: 3  
Marks: 75

Objectives

- To sensitise the students with the need for consumer education.
- To develop an understanding of market environment and business strategies for better consumption practices.
- To strengthen the consumer knowledge and to equip them to face challenges in the market situations.

Contents

1. Consumer Education
   a. Brief History
   b. Definition, concept and significance/need.
   c. Objectives

2. Action line for consumer education
   a. Action plan – knowing situation, formulating plan of action, implementing, evaluation and follow-up.
   b. Methods for imparting education – Role-plays and games, project testing and evaluation.
   c. Contents – Resource management, decision-making, sound purchasing habits, learning skills, conservation and protection of environment.
   d. Resources – Media – Written, audio and visual. Market place, government agencies, consumer organisations.
   e. Problems faced and remedial measures.

3. Teaching Consumerism
   a. Plans for teaching better consumption practices, factors affecting.
   b. Consumer aids – Meaning, Classification types.
c. Consumer Rights and responsibilities.

4. **Consumer Protection**
   a. Need, measures and methods.
   b. Role of consumer organisations – National and International.
   c. Consumers International Regional Office at Pune, India.

5. **Setting up a consumer organisation.**
   a. Significance, purpose, types of organisations
   b. Organizational set up – Objectives, membership, emblem/Logo, basic requirements and registration.
   c. Suggestions for making the organisation viable and effective.
   e. Do’s and Don’ts for the consumer activist
   f. Visits to local and prominent consumer organisations.
   g. Formulation of local consumer clubs.

6. **Future of Consumer Education.**
   a. Need for research, organising and implementing
   b. Organisational role – agencies conducting and supporting research.
   c. Formulation of projects in consumer research
   d. Empowerment of consumers
M. SC. – HUMAN DEVELOPMENT

List of Courses

I. CORE COURSES:

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<td>History and Theories of Human Development</td>
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<td>44102</td>
<td>Methods of Studying Human Development</td>
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<td>Study of Family in Society</td>
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TOTAL 28

Internship/ Block Placement

II. ELECTIVES:

(Minimum of 20 Credits to be selected)

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<td>Principles of Guidance and Counselling</td>
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<td>54123</td>
<td>Planning for Project Management</td>
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54124  Curriculum for Early Years  04
54127  Monitoring and Evaluation of Programmes  03
54128  Care of Children with Disabilities & Illnesses  03
54129  HIV/AIDS Counselling  03
54130  Guidance and Coping in Crises  03
54131  Women's Studies  02

III.  RESEARCH
  40101  Research Methods and Statistics  03
  40102  Statistics and Computer Applications  03
  54114  Dissertation (2 + 4)  06
      TOTAL  12

A total of 60 credits have to be taken by students to complete the programme. If the number of credits exceeds 60, it is permissible; but the calculation of the Grade point average will be done on the basis of 60 credits.

Internship is an integral part of the programme of study this can be arranged during the course of study or after the completion of programme. It can be arranged in one single assignment or two.

A minimum of 6 weeks should be provided for Internship for each student under staff supervision.
## M. SC. – HUMAN DEVELOPMENT

### SCHEMES OF INSTRUCTION

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Electives (3 – 4 courses i.e. 8 – 12 credits)

|              |        |                                                           |       |       |
|              | 44109  | Adolescence and Youth                                      | 3     | 2     |
|              | 44110  | Parenting in Early Childhood                               | 3     | 2     |
|              | 44111  | Communication Technologies                                  | 2     | 1     |
|              | 44112  | Innovative Programmes of Education & Development           | 3     | 2     |
|              | 44113  | Infant Development & Stimulation                            | 3     | 2     |

Semester III

|              |        |                                                           |       |       |
|              | 54114  | Dissertation                                               | 2     | 0     |
|              | 54115  | Advanced study in Human Development – II                   | 2     | 2     |

Electives (4 – 6 courses i.e. 10 – 16 credits)

<p>| | | | | |
|              |        |                                                           |       |       |
|              | 54116  | Principles of Guidance &amp; Counselling                       | 3     | 2     |
|              | 54117  | Mental Health in Developmental Perspective                 | 2     | 2     |
|              | 54118  | Development of the self                                    | 3     | 2     |
|              | 54119  | Gender Equity &amp; Society                                    | 3     | 2     |
|              | 54120  | Child &amp; Human Rights                                       | 3     | 2     |
|              | 54121  | Development of Creativity                                  | 3     | 1     |
|              | 54122  | Care of the Elderly                                        | 3     | 2     |
|              | 54123  | Planning for Project Management                            | 2     | 1     |
|              | 54124  | Curriculum for Early years                                 | 4     | 2     | 2   | 6    | 100 |</p>
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**Electives (2 – 4 courses) (as applicable)**

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*Recommended for Students of Human Development
HUMAN DEVELOPMENT

Introduction

The Master’s programme in Human Development is built upon knowledge and competencies developed during the undergraduate programme. The focus of the post-graduate programme would be to develop professional and entrepreneurial skills in the domains of Early Childhood Care and Education, working for Persons with Special Needs, Empowerment of Families and Communities and Development Programming.

The curriculum focus at post-graduate level is to foster a firm theoretical background with amalgamation of practical skills and development of research related abilities, so that the graduates are capable of critical and analytical thinking, sensitive to societal issues and concerns, and able to communicate skillfully.

The programme aims at creating professionals who will utilize the substantive knowledge in the realm of Human Development to respond to the challenges of a dynamic socio-economic political situations and system. The students would be competent to address emergent issues and concerns of society with sensitivity to understand cultural, psychological and life-span developmental perspectives.

The programme would enable graduates to work as: teachers at university level, researchers, co-ordinators/supervisors/programme planners in government and non-governmental organizations/ agencies at national and international level. The students having adequate background in planning, evaluating, monitoring and organizing skills would be able to work as entrepreneurs and also play advocacy related roles.

Objectives

The Post-Graduate program in Human Development will focus on developing knowledge and competence for:

(i) Teaching and research in academic and other institutions.

(ii) Planning and conducting intervention, guidance and advocacy for empowerment of families and communities.

(iii) Supervisory, training and consultancy roles and responsibilities in Government and non-government agencies/institutions.

(iv) Entrepreneurship in specific areas of human development and family studies.

(v) Planning, monitoring and evaluation of various programmes for children and families.

(vi) Advocacy and policy related roles
Eligibility

The candidates should have completed 10 + 2 + 3 with Human Development or Home Science at B.Sc. level. Those who have graduated with psychology/sociology/social work/special education or any other allied subjects are required to do the remedial/prerequisites if admitted to the programme as per the recommendations of the academic adviser/Head of the Department.
RESEARCH METHODS AND STATISTICS

Code: 40101
Credits: T 3 P 0
Periods/ Week: 3
Marks: 75

Objectives

● To understand the significance of statistics and research methodology in Home Science research.
● To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
● To understand and apply the appropriate statistical technique for the measurement scale and design.

Contents

1. Science, scientific methods, scientific approach.
2. Role of statistics and research in Home Science discipline.
   Objectives of research: Explanation, control and prediction.
3. Types of Research: Historical, survey, experimental, case study, social research, participative research.
4. Definition and Identification of a Research Problem
   - Selection of research problem
   - Justification
   - Theory, hypothesis, basic assumptions, limitations and delimitations of the problem.
5. Types of variables
6. Theory of probability
   - Population and sample
   - Probability sampling: systematic random sampling, two stage and multi stage sampling, cluster sampling.
   - Non-Probability sampling: purposive, quota and volunteer sampling/ snow ball sampling.
6. **Basic principles of Research Design**
   - Purposes of research design: Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto,
   - Longitudinal and cross sectional

8. **Qualitative Research Methods**
   - Theory and design in qualitative research
   - Definition and types of qualitative research
   - Methods and techniques of data collection
     - informal group discussions
     - interviews: Key informant, in-depth interviews
     - observations
     - social mapping
     - participatory rapid assessment
     - participatory learning assessment

9. **Data Gathering Instruments**
   - Observation, questionnaire, interview, scaling methods, case study, home visits, reliability and validity of measuring instruments

10. **Scales of measurement and the appropriate statistical techniques.**

11. **Critical analysis of research.**

12. **Writing a research proposal.**

13. **Analysis of data and research report.**

**References**

HISTORY AND THEORIES OF HUMAN DEVELOPMENT

Code: 44101
Credits: T 3 P 0
Periods/week: 3
Marks: 75

Objectives

- To understand the need for theory in Human Development.
- To see theories in context.
- To examine historical perspectives in the evolution of theory.
- To understand the practical applications of a theory.
- To discuss various theories of Human Development.
- To critically evaluate the cross-cultural applicability of theory.

Contents

1. Early Theories
   Preformationism, Locke, Rousseau, Eastern philosophers.

2. Ethological theories
   Darwin, Lorenz, Tinbergen, and Bowlby; cross-cultural relevance, current status.

3. Freud’s psychoanalytic theory
   Freudian theory, neo-Freudians, cross-cultural relevance, current status.

4. Learning theory
   Pavlov, Watson, Skinner. Cross-cultural relevance and current status of learning theory.

5. Cognitive developmental theory
   Piaget’s theory, cross-cultural relevance and current status.
   Vygotsky’s theory, cross-cultural relevance and current status.

6. Social learning and social cognition theories
   Bandura’s theory, cross-cultural relevance and current status.

7. Theories of the self
   Mead, Kohut, Myers Briggs Type Indicator, Zohar, Kakar, Hermans, Eastern philosophy.

8. Conclusion
   Humanistic psychology and developmental theory.
References

METHODS OF STUDYING HUMAN DEVELOPMENT

Code: 44102
Credits: T 1 P 2
Periods/week : 5
Marks : 75

Objectives

- To study different methods and techniques of understanding Human Development.
- To apply the various methods studied in a practical context.

Contents

1. **Understanding the self**
   Administration, scoring and evaluation of any test about the self, e.g. Myers Briggs Type Indicator, the subjective well-being inventory (WHO).

2. **Observation method**
   Theoretical perspectives; use of checklists, establishing reliability in observations, maintaining an observation record, report writing and evaluation.

3. **Interview method**
   Theoretical perspectives, development of different types of interview protocols, analysis and coding of interview data.

4. **Questionnaire method**
   Theoretical perspectives, development of different types of questionnaire protocols, analysis and coding of questionnaire data.

5. **Some psychometric methods**
   - Scales for infant assessment,
   - The Wechsler battery of tests,
   - Children’s Apperception Test,
   - Draw a Man test,
   - House-Tree-Person,
   - Raven’s Progressive Matrices,
   - Self-Esteem Inventory,
   - Sex-Role Inventory.
6. **Case study method**

Theoretical perspectives, development of different types of case study protocols, analysis and coding of data.

**References**

STUDY OF FAMILY IN SOCIETY

Code: 44103
Credits: T 3 P O
Periods/week: 3
Marks: 75

Objectives

● To understand family as a component of socio-cultural milieu and context.
● To familiarize students with developmental perspective in family life cycle.
● To realize and appreciate universals and variations in family life patterns across cultures and sub-cultures.
● To create awareness regarding philosophy, structure, function, needs and strengths of families with specific reference to the Indian family.
● To understand theoretical and methodological concerns related to family studies.

Contents

1. The family in social context
   – Family as a component of social system, structure and context.
   – Family as an evolving and dynamic ins : uation
   – Functions of family

2. Socio-cultural studies of family patterns in India
   – Family structure : Traditional extended/joint families..
   – Alternate families – single parent, childless, female headed
   – Unitary families.
   – Cause and effect of different family structures on changing roles of family.

3. Approaches and theories in Family Studies
   – Developmental approach
   – Interactional approach
   – Institutional approach
   – Systemic approach
   – Family life-cycle approach
   – Cyclical theory
- Progressive theory
- Structural – functional theory.

4. **Family and societal exchanges/influences**
   - Work and family
   - Education and family
   - Health and family
   - Religion and family
   - Ecology and family
   - Government and family

5. **Contemporary Issues and concerns**
   - Family violence, battered women, child maltreatment, sexual abuse.
   - Dowry and family violence
   - Child rearing and socialization
   - Gender roles
   - Divorce and remarriage.

**References**


EARLY CHILDHOOD CARE AND EDUCATION

Code: 44104
Credits: T 1 P 2
Periods/week: 5
Marks : 75

Objectives
- To gain knowledge and insight regarding principles of early childhood care and education.
- To develop the skills and techniques to plan activities in ECCE centres of different types, to conduct activities in early childhood care and education and to work effectively with parents and community.

Contents
1. Principles of Early Childhood Care and Education
   - Importance, need and scope of ECCE.
   - Objectives of ECCE
   - Types of preschools/programmes: Play centres, day care, Montessori, kindergarten, balwadi, anganwadi etc.
   - Concepts of non-formal, formal and play way methods.

2. Historical Trends (overview)
   - Contribution of the following thinkers to the development of ECCE (their principles, applications and limitations) in the context of ECCE.

3. ECCE in India
   Pre Independence period, Post Independence – Kothari Commission, contribution of the five-year plans to ECCE – Yashpal Committee, Maharashtra Preschool Centre Act.

4. Contribution of the following agencies/programmes to ECCE in India
   ICCW, IAPE, NCERT, ICDS, UNICEF, NCTE, Mobile Crèche etc.

5. Organisation of Pre-school Centres
   - Concept of organisation and administration of early childhood centres.
   - Administrative set up and functions of personnel working at different levels.
Building and equipment: Location and site, arrangement of rooms, different types and size of rooms, play ground, storage facilities, selection of different types of outdoor and indoor equipment, maintenance and display of equipment and material.

Staff/ Personnel service conditions and role: Role and responsibilities, essential qualities of a care giver/ teacher, other personnel

Record and Report: Types, aim and purpose/ need, general characteristics e.g. anecdotal, cumulative, sample work, medical etc.

6. Programme Planning
Planning: Setting goals and objectives of plans-long term, short term, weekly and daily planning, routine and schedules.

7. Activities for ECCE
Language Arts: Goals of language, types of listening and activities to promote listening various activities – (songs, object talk, picture talk, free conversation, books, games, riddles, jokes, stories. Criteria and selection of activities, teacher's role).

Art and Craft Activities (Creative activities of expression): Types of activities –chalk, crayon, paints, paper work and best out of waste. Role of teacher in planning the activity, motivating children. Fostering appreciation of art and craft activities.

Music: Songs, objectives of music education, establishing goals, setting the stage and role of the teacher. Three aspects of music, making, listening and singing.

Mathematics: Goals of mathematical learning, developmental concepts at different stages; principles of teaching mathematics – first hand experience, interaction with others, using language, reflection. Mathematical concepts like: classification, conservation, seriation, comparison, counting, fraction, one to one correspondence, addition and subtraction.

Science: a) Thinking: Observing, inferring, classifying, communicating. b) Concept formation: Differentiation, grouping, labeling. Role of science, developing scientific outlook by a spirit of inquiry, objectivity, observation. Role of teacher in some important science experiences.

Social Studies: Goals of social studies, field trips, of fostering good self-concept and respect for others. Promoting social studies through celebrations of festivals. Role of teacher.

Practicals
1. Visits to various centres, which cater to the preschool stage e.g.: Day care Centre, Balwadi, Anganwadi, Mobile Creche etc.
2. Preparing a resource unit file on the basis of play way method/ approach.
3. Preparing teaching material kit and presentation in mock set up:-
   • Story and their techniques
• Types of puppets and mobiles
• Art and craft portfolio
• Song booklet and low cost musical instruments
• Readiness games and material
• Picture talk and object talk related material etc.

4. Preparing a programme of activities for children with special abilities.
5. Planning and executing activities in ECCE centres.
6. Role play of home visits and conducting a home visit to a family known through practice teaching.
7. Planning of a parent teacher meeting: Stimulation of meeting/ event/ function – planning programme-evaluating and reporting the programme.

References


STATISTICS & COMPUTER APPLICATIONS

Code: 40102
Credits: 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To understand the role of statistics and computer applications in research.
- To apply statistical techniques to research data for analysing and interpreting data meaningfully.

Note: Students should be given hands-on experiences to use appropriate software packages for selected statistical analyses.

Contents

1. Conceptual understanding of statistical measures, Classification and tabulation of data, Measurement of central tendency, measures of variation.
2. Frequency distribution, histogram, frequency, polygons, Oliver
3. Binomial distribution
4. Normal distribution – Use of normal probability tables
5. Parametric and non-parametric tests.
6. Testing of hypothesis. Type I and Type II errors. Levels of significance.
7. Chi-square test. Goodness of fit. Independence of attributes 2 x 2 and r x c contingency tables.
9. Correlation, coefficient of correlation, rank correlation.
10. Regression and prediction.
11. Analysis of variance - one way and two-way classification.
12. Experimental Designs
   - completely randomised design
   - randomised block design
   - Latin square design
Postgraduate Home Science

- factorial design
- trend analysis

References

2. Edwards. Experimental Design as Psychological Research.
4. SPSS/ PC for the IBM PC/XT, SPSS Inc.
SCIENTIFIC WRITING

Code: 44105
Credits: T 1 P 1
Periods/week: 3
Marks: 50

Objectives

- To be able to appreciate and understand importance of writing scientifically.
- To develop competence in writing and abstracting skills.

Contents

1. Scientific writing as a means of communication
   - Different forms of scientific writing.
     - Articles in journals, Research notes and reports, Review articles, Monographs,
     - Dissertations, Bibliographies, Book chapters and articles.

2. How to formulate outlines
   - The reasons for preparing outlines:
     - as a guide for plan of writing
     - as skeleton for the manuscript
   - Kinds of outline
     - topic outlines
     - conceptual outline
     - sentence outlines
     - combination of topic and sentence outlines

3. Drafting titles, Sub titles, tables, illustrations
   - Tables as systematic means of presenting data in rows and columns and lucid way of indicating relationships, and results.
   - Formatting tables: Title, Body stab, Stab Column, Column Head, Spanner Head, Box Head
   - Appendices: use and guidelines

4. The writing process
   - Getting started
   - Use outline as a starting device
5. **Parts of dissertation/research report/ article**

- Introduction
- Review of literature
- Methods
- Results and discussion
- Summary and abstract
- References
  - Ask questions related to: content, continuity, clarity, validity internal consistency and objectivity during writing each of the above parts.

6. **Writing for Grants**

- The question to be addressed
- Rationale and importance of the question being addressed
- Empirical and theoretical framework
- Presenting pilot study/data or background information
- Research proposal and time frame
- Specificity of methodology
- Organization of different phases of study
- Expected outcome of study and its implications
- Budgeting
- Available infra-structure and resources
- Executive summary

**References**


ADVANCED STUDY IN HUMAN DEVELOPMENT – I

Code : 44106
Credits : T 2 P 0
Periods/week : 2
Marks : 50

Objectives

- To undertake an advanced study of the stages in human development with special focus on stages from prenatal development to adolescence;
- To understand the principles and factors influencing human development in these stages.

Contents

1. Principles and Concept of Development
   - Principles of growth and development.
   - Developmental tasks.
   - Basic concepts of development - maturation and learning, sensitive periods, individual differences, nature- nurture issue.
   - Secular trend in growth.

2. Prenatal development
   - Recapitulation of stages in prenatal development, genetic and environmental factors: maternal conditions and teratogens. Significance of the genome project for understanding human development.
   - Importance of Indian practices during pregnancy.

3. Infancy: (birth - 2 years)
   - Imitation, object permanence and other cognitive accomplishments.
   - Early language development.
   - Social relationships during infancy.
   - The cultural experience of being an infant.

4. Early childhood (2-6 years)
   - Transition from infancy to childhood.
   - Physical and motor development.
- Play and social relationships. The emerging self.
- Language, cognition and emotions in early years.
- Early childhood education.
- Early socialization, parenting and cultural processes.

5. **Middle childhood (7-11 years)**
- Physical and motor development: changes and challenges.
- Sense of industry and personality development.
- Cognitive, moral and language development.
- Social relationships - peers, siblings and parents.
- The experience of schooling - academic achievement.

6. **Adolescence (11-18 years)**
- Transition from childhood to sexual maturity - puberty and its consequences.
  - Emotional changes.
- Development of Formal operations - Adolescent thought. Integration of the self - issues of identity.
- Role of family, peers, community and ethnic group.
- Moral reasoning and judgement.
- Health, sexuality, mental health, delinquency - conformity.

**References**

CULTURE AND PSYCHOLOGY

Code : 44107
Credits: T 2 P O
Periods/week: 2
Marks: 50

Objectives

- To understand the basic concepts related to culture and psychology with specific reference to cross cultural psychology.
- To understand concerns and issues related to study of culture and psychology.
- To be familiar with research trends in the field of culture and psychology.
- To perceive the need for indogenization and development of humanistic approach in study of culture and psychology.

Contents

1. Understanding the concepts and process related to culture and psychology
   - Understanding the premise of basic concepts
   - Developmental psychology and culture
     - Epistemological considerations
     - Positivist and post-positivist approach
     - Critical Theory
     - Constructivist approach
     - Socio-historical approach

2. Understanding Culture and Development
   - Importance of Language
   - Social development
   - Personality development
   - Cognition
   - Emotion

3. Methodological issues and theoretical concerns in study of culture and psychology
   - Biological approaches
   - Cultural approaches
Theoretical concerns

Methodological issues

References

MANAGEMENT OF PROGRAMMES FOR CHILDREN AND FAMILIES

Code : 44108
Credits: T1P2
Periods/week: 5
Marks: 75

Objectives

- To understand the purpose, scope and challenges in the management of programmes for children and families.
- To understand the various approaches to programme management.
- To offer students opportunity to work with children & families in different settings.
- To offer students the opportunity to apply & translate the theoretical knowledge into practice.
- To organise, implement & evaluate programmes for children & family.
- To critically evaluate & review programme models.

Contents

1. Management
   - Meaning and importance of management.
   - Management skills.
   - Review of success & failure of different programmes.

2. Programmes for Children
   - Identification of Specific Programmes for Children.
   - Types of programmes & their management.

3. Programmes for Family
   - Identification of specific programmes for family.
   - Types of programmes & their management.
   - Family Counselling.

References


**Other Sources**


ADOLESCENCE AND YOUTH

Code : 44109
Credits: T 2 P 1
Periods/week: 3
Marks: 75

Objectives

● To understand the stages of adolescence and youth in human development.
● To study the major developmental characteristics of these stages.
● To study the issues of identity, developmental tasks and problems associated with these stages.

Contents

1. **The adolescent stage**
   - Its link with middle childhood and youth.
   - The concept of adolescence in India.
   - Developmental tasks of adolescence.

2. **Theoretical perspectives**
   G. Stanley Hall, Anna Freud, Erik Erikson, James Marcia, Kagan and Margaret Mead.
   Indian perspectives.

3. **Physical and sexual development**
   - Puberty, development of primary and secondary sex characteristics.
   - Psychological response to puberty.
   - Gender differences. Sexuality, sexual needs and sex education.

4. **Cognitive development**
   - Formal operations - Piaget's theory. Intellectual development at adolescence and youth.
   - The Information - Processing view.
   - Reasoning, thinking critically, reflective judgement, moral reasoning and judgement.

5. **Identity formation**
   - Indian views on adolescent's identity.
6. **Social and emotional development**
   - Family, peers and friendships. Interpersonal relations. Emotional competence.
   - Conflict with authority.

7. **School, college, work and career**
   - Adolescence and youth in the context of differential opportunities for education and formal training.
   - Importance of academic achievement and failure, related issues.
   - Training for career and work.

8. **Important agents of influence**
   - Family, community and culture.
   - Electronic media.

9. **Marriage**
   - Marriage choices and significance of marriage in human development.

10. **Delinquency and disturbance:**
    - Juvenile delinquency: causes and prevention.
    - Psychological disturbances: depression, suicide, substance abuse.
    - Causes of HIV/AIDS and prevention.

**References**

PARENTING IN EARLY CHILDHOOD

Code : 44110
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To understand the significance of parents role in early childhood.
- To develop skills to involve parents in early childhood education programmes.
- To learn to conduct parent education programmes.

Contents

1. Introduction
   - The task of parenting and the concept of parenting skills.
   - Changing concept of parenthood and childhood
   - Being a competent parent.

2. Individual Parenting Roles
   - Determinants of parenting behaviour
   - Characteristics of the parenting roles.
   - The mothering role
   - The fathering role
   - Concept of family, the family life cycle stages.

3. Developmental Interaction in Early Childhood Years
   - Parents role in developing self awareness in children
   - Family relations and communication.
   - Helping the child to learn to express and control emotions.
   - Helping children discover personal capabilities
   - Establishing routines and showing responsible behaviour.
   - Learning social role and interactions with others.
   - Meeting the family needs during this stage.
   - Meeting the children's needs
4. **Techniques of Parent Education in Preschool Setting**
   - Informal Meetings: Occasional/accidental meeting, written/printed–newsletters, circulars, notices etc.
   - Parent library, toy library
   - Workshops/demonstration centre.
   - Parents' corner
   - Open house
   - Large/ small group meetings
   - Individual meetings: Home visits, individual sessions.
   - Working with vulnerable families.

5. **Parent Education and Support**
   - Role of professionals
   - Parents as family workers
   - Flexibly to different needs.
   - Personal development for parents.

**Practicals**
- Conducting home visits and interviewing/ talking to parents.
- Arranging workshops for parents.
- Organising parent education programs based on parents needs
- Conducting parent – teacher meetings
- Reports and resource files to be maintained by students.

**References**
COMMUNICATION TECHNOLOGIES

Code: 44111
Credits: T 2 P 1
Periods/week: 4
Marks: 50

Objective

- To develop understanding regarding the vital aspects of communication and various Audio and visual media and their use.
- To develop understanding regarding the new communication technologies and their use.
- To develop skills in developing and using different communication technologies for various presentations.

Contents

1. Concept of communication. Scope of communication, communication process, approaches to communication.
2. Different media, their characteristics and use.
3. Use of video projector, slide/ filmstrip projector computers.
4. Introduction to new communication technologies.
   - Satellite distribution and broadcast networking.
   - Developing close circuit television package on (cctV) topics.
   - Incorporating the use of video films in presentation i.e. the selected clippings.
   - Slides: Making use of slides with audio commentaries for presentations.
   - Development and use of transparencies.
   - Digital method of communication.
   - Computer Graphic Designing.
5. Preparation of graphics for research reports/ seminars/ other presentation.
7. Presentations using power points.

References


INNOVATIVE PROGRAMMES OF EDUCATION AND DEVELOPMENT

Code : 44112
Credits: T2P1
Periods/week: 4
Marks: 75

Elective

Objectives
- To gain a preliminary understanding of the context of innovative approaches to interventions
- To develop an overview of the key elements and processes of successful innovative approaches to interventions.
- To study selected ongoing innovative programmes at the international, national, and regional/local levels.

Contents
1. The Context and need for innovative programmes
   - Changing philosophical orientations at the international, and national level. (Human rights, elimination of discrimination, equity and equality)
   - National/International conventions, ratification (e.g. promotion of breast feeding, protecting rights of women and children) policies and commitments
   - Response to diverse cultural situations and needs
   - Specific needs of special groups of people, e.g.: tribal women, children persons with special needs (disabled, hospitalised or street children, refugees and so on).
   - Availability of resources/ issues of sustainability.
   - Issues of out reach out/ quality and impact
   - Theoretical considerations, and cultural context of various approaches e.g. Child to child, Child rights.

2. Historical overview of innovative approaches to interventions (some key examples)
   - The Kosbad experience
   - Mobile creche, New Delhi
   - Bodh trust, Rajasthan
   - Women's Development Programme: Rajasthan (Tilonia)
Their theoretical foundations, philosophy, personal talent, commitments and sustenance mechanisms of these visionaries.

3. **A detailed overview of selected Innovative Programmes**

   **Note:** A list of programmes are given below as examples of innovative programme. Students may be oriented in detail to a range of 7-10 programmes with representation from each of the sub-categories.

   - Description of programmes should focus on Theoretical orientation, Philosophy, Approaches to programming, Training, Community involvement, Impact, Cost/Benefits, Issues of sustainability.
   - Summing up should include key features of innovative programmes.

   ● **Child care and education**
     - SIDH: Society for the Integrated Development of Himalayas:
     - SHAISHAV: Creches for tobacco workers
     - Family day-care in Bombay
     - PALMYRAH WORKERS DEVELOPMENT SOCIETY, Tamilnadu: community pre-schools for rural poor
     - BALNIKETAN SANGH, Indore or URMUL TRUST, Bajju

   ● **Women’s Development Programmes**
     - Mahila Samakhya: A programme for education for Women’s equality (NARI ADALAT)
     - Women’s Empowerment through Co-operatives: Self-Employed Women’s Association

   ● **Community Development and Health**
     - PRAGYNA: From consciousness to Awareness: The Integrated Project for mother and child Health., MADRAS
     - SOCIETY FOR EDUCATION, WELFARE AND ACTION (RURAL) Jhagadia, GUJARAT
     - SANCHETANA: From Clinic to Community Health. AHMEDABAD
     - CHETNA: Initiatives in Awareness, Education and Training (Ahmedabad)

   ● **International Context**
     - MOCEF: Mother and Child Education Project (TURKEY)
     - ENTRY POINT: Childcare through Mothers/ Community Groups (NEPAL)
     - INVOLVING FATHERS IN COMMUNITY BASED ECD PROGRAMMES; Israel
     - Empowering Fathers in Poverty Context: Involvement in Childcare (Montreal, Canada)
     - Community Resource Centres for ECE Programmes; (Australia, Canada)

4. **Innovative Programmes in Regional Context**

   **Practical Experiences:** Orientation to selected innovative programmes that may be in the vicinity,

   - Observational visits
– Discussions in community
– Video films on programmes, followed by discussion
– Placement for a block of time in any programme

References


TITLES

Stree Hitakarini
KEM Rural Health project
Banwasi Sewa Ashram
Comprehensive health and Development project, Pachod
Child in Need Institute
Comprehensive Labour welfare Scheme, UPASI
Rural Unit for Health and Social Affairs
Mini health centres programme of VHS
Action for Welfare and Awakening in Rural Environment
Society for education, Welfare and Action
Community Based Contraceptive distribution programme of FPAI and BHU

5. Population Council: Reports of innovative programmes (ongoing: Relevant issues/ titles)
9. Annual Reports of organisations and documents published by, CHETNA, SEWA, Or Other NGOS.
INFANT DEVELOPMENT AND STIMULATION

Code : 44113
Credits: T 2 P 1
Periods/week: 4
Marks : 75

Elective

Objectives

- To get an overview of infancy and infant development as a first stage in the life span development process.
- To gain an understanding of theoretical, empirical and applied work in the field of infancy.
- To form a meaningful and practical understanding of infancy with special reference to the Indian context.

Contents

1. Newborn and infant development and behaviour
   - New born behaviour and capacities
   - Development and abilities during infancy
   - Adaptation strategies to cultural settings and practices.

2. Early experiences and developmental consequences
   - Optimal and non-optimal growth
   - Influence on physical, psychomotor and cognitive growth and development
   - At risk conditions

3. Early Interaction : A beginning in attachment formation
   - Course of attachment
   - Dyadic versus multi-caring
   - Role of father in formation of attachment.
   - Interaction as a cultural process

4. Language development in infancy
   - Environmental, interactional and cultural perspective
   - Brain correlates and developmental changes
   - Variations in development
   - Multilingualism
5. **Developmental assessment**
   - Understanding the process of development
   - Need and reasons for infant assessment
   - Methodological issues related to infant assessment
   - Ethical issues and concerns related to infant assessment.

6. **Intervention and stimulation programmes/activities**
   - The need and rationale for intervention and stimulation programmes/activities.
   - The process involved in planning and implementing intervention programmes with specific reference to the Indian setting.
   - Traditional methods, games, songs of infant care and stimulation.
   - Issues and concerns related to intervention programs

**Practical experiences may be related to**
1. Observing infants in various settings
2. Perception of different groups/cultures on infant care and development.
3. Testing and assessment of infants
4. Formulating activities for stimulation

**References**


ADVANCED STUDY IN HUMAN DEVELOPMENT – II

Code : 54115
Credits: T 2 P O
Periods/week: 2
Marks: 50

Objectives
- To undertake an advanced study of the stages in human development with specific focus on youth, adulthood and old age;
- To understand the principles and factors influencing human development in these stages.

Contents
1. Youth/Young adulthood (20 - 35 years)
   - Introduction: Biological, cultural and developmental perspectives on youth and adulthood.
   - Developmental needs. Importance of social organization.
   - Culmination of identity formation.
   - Life cycle approach - sexuality, marriage, marital adjustment, parenthood.
   - Census data on adult population in India.

2. Middle adulthood (35 - 50 years)
   - Physical continuity and changes. Adult intelligence. Personality development - role in family.
   - Development of the self. Inter - generation relationships. Maintaining family relationships.
   - Friendships.
   - Parenting adult offsprings and their marriage.

3. Late adulthood (50 - 65 years)
   - Continuity and change in personality - the family life-cycle.
   - Social relationships.
   - Grand parenthood - intergenerational relations.
   - Occupational continuity and change - effect on identity.
4. **Old age (65+ years)**
   - Physical aspects of aging.
   - Change in cognitive abilities and creativity.
   - Psychosocial development
   - Changes in family life cycle. Health and disease.
   - Death, dying and bereavement.

**References**

PRINCIPLES OF GUIDANCE AND COUNSELLING

Code: 54116
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To understand the need for guidance and counselling in human development.
- To introduce basic concepts in guidance, counselling and therapy.
- To discuss the processes involved in counselling at different stages in life.

Contents

1. **Constructs of guidance, counselling and therapy**
   - Basic differences.
   - Guidance and counselling needs of individuals, families and systems.
   - Role of culture in influencing counselling needs and practices.
2. **Nature of psychological disorders at different stages that require counselling and therapy**
   - At childhood
   - At adolescence and youth
   - At adulthood
   - In old age
3. **Principles of counselling and therapy**
   - Approaches to counselling at different developmental stages.
   - Family therapy approach.
4. **Qualities and skills of a counsellor.**
5. **The process of counselling**
   First contact, assessment, intervention, closure, follow-up.

Practicals

1. Interactions with practicing counsellors and therapists through visits to schools, clinics, women's centres and hospitals etc.
2. Learn about the counselling process - role play, mock sessions etc.
References

MENTAL HEALTH IN DEVELOPMENTAL PERSPECTIVE

Code: 54117
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Objectives

● To understand the importance of mental health at different stages in life.
● To develop skills for promoting mental health across the life span.
● To identify mental health issues in the community and sensitizing its members.
● To develop skills of organizing school mental health programme.

Contents

1. Mental Health
   - Definition, concept and importance of holistic health, well-being and happiness.
   - National mental health policy of India (1982).
   - Community mental health: needs and programmes.

2. Infancy
   - Implication of attachment and bonding for mental health; deprivation syndrome.
   - Malnutrition and its effect on growth and behaviour.
   - Intervention with families and professionals from allied fields.

3. Early Childhood Years
   - Mental health needs: safety, security, relationships, autonomy and self-concept, nutrition and health.
   - Behaviour difficulties, manifested at this stage, e.g. feeding problem, aggression, withdrawal, problems related to early schooling and formal leaving.
   - Intervention work with children, families, teachers and other significant adults.

4. Middle Childhood
   - Mental health needs: recognition, appreciation, friendships and industry.
   - School related problem e.g. discipline, truancy, fears and phobias, learning difficulties and disabilities.
   - Maladjustment at home and school.
   - Providing guidance to children, parents, teachers, peers and school administration.
5. Adolescence
   - Mental health needs: sense of identity, autonomy, individualism/familism.
   - Problems related to physical appearance, development and relationships.
   - Problem related to sexuality.
   - Authority - adolescent conflicts (e.g. parents, school authority, grand parents).
   - Guidance and counselling of adolescents, parents and other significant adults, school personnel.

6. School mental health programmes
   - Need for mental health programmes for identification and intervention.
   - Improving school climate.
   - Importance of sensitizing and involving administrators and teachers in mental health aspects of children.
   - Orienting teachers to attend to developmental behaviour problems in the classroom, to make referrals wherever necessary.

7. Adulthood
   Mental health problems in the community:
   - Life events that cause stress, e.g. separation due to death, migration etc.
   - Substances abuse and addiction.
   - Violence and sexual abuse.
   - Management of stress-counselling, training in relaxation, yoga, meditation.

Recommended assignments
1. Visits to schools/institutions that have counselling centres/mental health programme.
2. Design a mental health intervention programmes for any one age group.

References


DEVELOPMENT OF THE SELF

Code : 54118
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To initiate self-enquiry and introspection;
- To discuss different aspects of the self and its development;
- To contextualise the self in culture

Contents:

1. Definitions of development and self
   - Linking the individual and the group; self-concept and self-esteem.

2. Approaches to self
   - Family history and its impact on individuals.
   - Biographies of significant persons as illustrations.

3. The self in the life-span
   - Significance of birth; role of childhood experiences; changing roles and responsibilities
   - with age; the sense of self at adolescence
   - Cultural variations, achieving selfhood at adulthood

4. The individual and the context
   - Influence of family, peers and school on the development of self-esteem.
   - Community and culture in relation to the development of self.

5. Gender identity and the self
   - Biological, psychological and cultural aspects of being male and female, stereotypes, beliefs and gender discrimination
   - Effect on the sense of self. Cultural and sub-cultural differences.

6. Role of spirituality and religion in the development of the self.
   Experiences, values, beliefs and attitudes in society.
7. Self
   - improvement techniques.

Practicals

1. Read an important biography and analyze the events and factors that contributed to the development of the self in the individual.
2. Write an autobiography highlighting the development of the self through different stages.
3. Conduct a case study of an individual and profile the development of the self in a cultural and social context.

References

GENDER EQUITY AND SOCIETY

Code : 54119
Credits: T2P1
Periods/week: 4
Marks: 75

Objectives

- To appreciate gender as a socio-cultural constraint
- To create awareness of the gender biases and barriers that prevail in society.
- To develop sensitivity regarding the socio-economic and political factors that determine life experiences in relation to gender.
- To become aware of the need for proactive approach and empowerment to attain and maintain equality.

Contents

1. Major Concepts and Issues
   - Differentiation between sex and gender, Gender role socialisation and gender role stereotypes, Gender related division of labour and its implications.

2. Gender construction within the family and society
   - Intra family dynamics in relation to distribution of resources, authority and power structure according to age, sex, mental status and kinship relation. Forms of family in terms of residence and descent, i.e. nuclear, joint and extended families; patrilineal and matrilineal family systems.

3. Gender identities that control and mediate in society
   - Gender equality in educational access and retention in the educational system, Impediments to female education, sexism in education, Women and health, lacunae in health care system; population control debate; contraceptive and its impact on women's health, female feticide and its implications.

4. Gender identities as inscribed in culture
   - Cultural controls over gender roles, construction of gender identities in culture, Gender and religion, Media portrayal of gender roles, equality – inequality perspectives and impact.
5. **Equality and empowerment**

- Concept of empowerment for equality, factors that facilitate and inhibit the process of empowerment, Role of families and society, Government and NGO's in initiating and sustaining the policies and programmes for empowerment.

**Practicals**

Practicals assignments may include:

- Visits to women's organisations
- Interviews with activists in society
- Case studies of individuals/organisations involved in gender related activism
- Planning and organisation of intervention/advocacy programmes for empowerment and equality
- Class discussions/debates on gender issues and controversies
- Critical analysis and appraisals of portrayals of gender roles in print and electronic media (group discussions).
- Written and oral presentations of real life situations of equality/inequality in gender roles

**References**

CHILD AND HUMAN RIGHTS

Code : 54120
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To develop awareness and perspective of Human Rights as a professional in the field of Human Development.
- To develop sensitivity to Human Rights with specific reference to children's rights
- To gain knowledge about Charter on Human and Children's rights
- To work with women and children to create awareness about their rights and to guide them to access their rights.

Contents

1. Definition and Evolution of Rights
   - Human rights
   - Child rights
   - Women's rights
   - Charter
   - Convention
   - Policy

2. Status of Indian Children and their rights
   - Demographic distribution
   - Gender disparities (infanticide, foeticide, girl child).
   - Children in difficult circumstances (Children of prostitutes, child prostitutes, Child labour, street children, refugee children and child victims of war).
   - Children with special needs.

3. Status of Women and their Rights
   - Status of women in India.
   - Women and human rights
   - Forms of violation of women's rights
     - Violence against women in home, workplaces and society.
• Sexual harassment, rape
• Health and nutrition based deprivations
• Crime against women
• Political discrimination

4. **Classification of Human Rights**
   - Moral rights
   - Legal rights
   - Civil and political rights
   - Social emotional and cultural rights
   - Environmental and developmental rights.

5. **International convention of Human rights**
6. **Advocacy for Human rights.**

**Practicals**

1. Case studies of women and children in difficult circumstances in NGO settings.
2. Workshops with children and women through; art, creative activities, media to be followed by discussion on resolution of problems/issues.

**References**


DEVELOPMENT OF CREATIVITY

Code : 54121
Credits: T 1 P 2
Periods/week: 5
Marks: 75

Objectives

● To understand the relevance and scope of studying creativity.
● To discuss the concept of creativity and various approaches to its study.
● To understand the role of the individual, the context and socialisation in developing creativity.
● To become familiar with psychometric measurement and alternate ways of assessing creativity.

Contents

1. Definition and concept of creativity
   – Types and degree of creativity (everyday creativity and eminent creativity),
   – Domains, insight and problem solving as related to creativity.

2. Relevance and scope of the study of creativity

3. Approaches to the study of creativity
   – Mystical approach (divine gift),
   – Psychology-dynamical approach (Freud),
   – Psychometric approach (Guilford & Torrance),
   – Cognitive approach (Weisberg),
   – Social personality approach (McKinnon),
   – Confluence approach (Gardner)

4. The role of the individual
   – cognition, abilities, interests, attitude, motivation, intelligence, knowledge, skills, beliefs, values and cognitive styles.

5. Relationship between creativity and intelligence

6. Influence of child-rearing practices, family and culture

7. Enhancing creativity – brainstorming, problem solving, creative dramatics & visualisation
8. **Measurement**
   - Psychometric and alternate methods of assessing creativity.

**Practical**

1. Tests of creativity: Torrance Test of Creative Thinking (TTCT), Baquer Mehdi’s Indian adaptation.
2. Use of brainstorming techniques for problem solving
3. Use of Parne’s 5 stage method of creative problem solving
4. In 6-10 seasons, develop a plot of a story with active participation of children and dramatise it with them as role-players.
5. Use of consensual assessment technique to rate the creative work of children and adults (stories, poems and artwork)

**References**


**Journals**

1. Journal of Creative Behaviour
2. Creative Research Journal
CARE OF THE ELDERLY

Code : 54122
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To enable students to become aware and sensitized to issues related to care of the elderly.
- To enable students to understand the theoretical perspectives of the aging process.
- To develop skills for organising activities for the elderly.

Contents

1. Introduction
   - Emergence and scope of gerontology and elderly care.
   - Historical perspective, demographic trends in India.
   - Concept of aging and problems: Social, medical, psychological problems, occupational etc.

2. Theoretical perspectives
   - Theories: Disengagement theory, Activity theory, Human development theory, Continuity theory, Age stratification theory, Labeling theory

3. Aging Process
   - Biological and physiological aspects; Psychological aspects; Social aspects: Social status, retired status, single status, economic status, security, guide and teacher, social adjustment and recognition;
   - Spiritual aspects: karma theory and religion;
   - Economic aspects.

4. Adjustment Patterns and Changing Lifestyles in Old Age
   - Family patterns in later life: Changing roles and the aging family; Conjugal: Husband-Wife relations in old age; Sexual adjustment;
   - Retirement years and marital adjustment;
   - Intergenerational family relations; Grand parenthood; Widowhood/singlehood; Alternative lifestyle; Second marriage in the later life.
5. **Work, leisure and retirement patterns**
   - Work – Meaning of work, individual motivation; Leisure; Retirement – benefits, freedom of retirees, fear change in personal and social life, problems like – sense of loss, women retirees, awareness, use of authority, social worth;
   - Attitude towards retirement: Poverty, poor health, retirement and suicide, abandonment, liberation and diachronic solidarity.

6. **Death Dying and Bereavement**
   - Impact of death on society; Attitude towards death; Denial and thoughts of death; bereavement, grief and social setting.

7. **Services and programs for the Aged**
   - Categories of services: Housing, health, leisure time activities; institution for the aged day care centres; economic programmes; Re-engagement (after retirement); Retirement pension, death cum retirement gratuity, provident fund, health measures. Insurance scheme, investment & taxation and property.

**Practicals**

1. Visit to and report of old age centres/ homes.
2. Organise recreational activities in homes for the aged
3. Prepare case studies on any two inmates.
4. Arranging special service/ counselling activities for the aged with the help of resource person, if necessary e.g. yoga, lectures etc.
5. Term papers, presentations, debates on issues and perspectives related to different aspects of the senior citizen’s life.

**References**

PLANNING FOR PROJECT MANAGEMENT

Code: 54123
Credits: T1P1
Periods/week: 3
Marks: 50

Objectives

- To understand the concepts, purpose and processes for planning and management.
- To develop the skills for planning and managing projects.
- To identify organisational goals and project objectives.
- To assess the functioning of an ongoing project.

Contents

1. Planning
   - Basic concepts; Need, purpose. Feasibility, project formulation.
   - Functions of planning,
   - Steps in Planning; Define the objectives, quality specifications and outcomes,
     Decide the time frame, plan the cost dimensions, plan implementation details.

2. Project identification
   - Identifying and defining the project goals.
   - Project design and strategic planning.

3. Management of the Project
   - Monitoring and Evaluation: supervisory meetings to plan overview,
   - Project appraisal, feedback. Follow-up meetings.
   - Project report

4. Project sustainability
   - Factors and Components of Project Sustainability.
   - Action plan for sustainability

Practicals

1. Prepare a project plan based on the information secured on an existing program in the locality. (as a learning exercise on a known case).
2. Prepare short term/ long-term plan(s) for enhancing quality of any program/project that exists in the locality.
3. Organise and implement some activities and evaluate impact. Prepare report.
4. Draft action plan for sustainability for any program in the locality.

References
CURRICULUM FOR EARLY YEARS

Code: 54124
Credits: T 2 P 2
Periods/week: 6
Marks: 75

Objectives

- To realise the importance of early years and why childhood matters.
- To understand the need for curriculum planning in early years and developing understanding of ECCE curriculum models and approaches.
- To develop understanding of current trends, issues, researches, theories and practices of ECCE programmes.
- To understand theories of play, value of play and its implication for ECCE programmes.
- To enable students to:
  - Plan programmes for various ECCE settings and implement the same.
  - Supervise participants in ECCE laboratory settings
  - Monitor and evaluate different ECCE programmes.

Contents

1. Early Childhood matters
   - The need and importance of Early Child Development (ECD) and Early Childhood Care and Education (ECCE).
   - Determinants of Child Survival and Development.
   - Ensuring quality and effectiveness in ECD programmes.
   - Provision of equity and access to programmes.
   - Diversity in programme conceptualization, training and implementation.

2. A. Contributions of Indian educators and its implications for Programme Planning in Indian Context
   - Christian Missionaries, Arundales
   - Indian innovations of Western Theories; Gijubhai Badheka Tarabhai Modak

B. ECCE curriculum and intervention models and innovative programmes and approaches across countries.

C. Programmes and approaches be studied with reference to
Postgraduate Home Science

- Theoretical concepts
- Programme content
- Learning environment
- Role of teacher
- Role of Learner and parents

3. Contemporary theories, practices and policies in ECCE.

4. Current research and trends in ECCE.

5. Role of parents and community in Early Child Development (ECD) Programmes
   - Developing sensitivity to cultures and traditions of community
   - Methods and strategies for parent and community
   - Reasons for involvement and need assessment
   - Effective use of involvement to monitor and enhance programme quality.

6. Understanding importance and value of play. Theories of play and their implications for planning ECCE programmes.

7. Planning ECCE programmes

8. Issues and concerns related to ECCE/ECD Programme
   - Coverage of populations, reaching the unreached
   - Gender equality and equity
   - Quality and sustainability
   - Training of personnel
   - Accreditation

9. The need and role of advocacy for quality and ECCE programmes
   - Consultancy and advocacy among ECD professionals
   - Advocacy role with NGOs Government institutions, national and International organizations/agencies, policy planners and media.

Practical

1. Observations in various ECCE settings e.g. day care, pre-schools, primary schools, ECCE centres, anganwadis etc.

2. Planning programmes for various ECCE settings

3. Implementing planned programmes in specific settings.

4. Supervising, monitoring and evaluating ECCE programmes in different settings.

References


BLOCK PLACEMENT/INTERNSHIP

Objectives

1. To provide hands on experiences by placement/internship in various settings such as ECCE/Welfare/Training Centres/Institution for children with special needs.
2. To experience working in an Government or NGO programme of social intervention and be able to apply knowledge of Human Development principles and programmes in the field setting.
3. To provide opportunities to understand and experience ground realities/policies/ programme structures.
4. To provide opportunities to work independently as Human Development personnel in an agency/programme setting.

Contents

- Participation in on going programmes of agencies/institutions and interaction with agency personnel at all levels.
- Observation/Participation with clients/ beneficiaries of the agency/ programme.
- Collecting information and preparing report of agency/ institution: programme objectives, structure, functions, strengths and weaknesses.
- The student after the internship would be required to present a written report to the respective agency and the department. This may be followed by oral seminar presentation by the group of students.
CURRENT TRENDS AND ISSUES IN HUMAN DEVELOPMENT

Code : 54125
Credit: T 2 P 0
Periods/week: 2
Marks: 50

Objectives

- To create awareness regarding current trends, issues and researches related to various aspects of human development, early childhood education, family studies and disabiliting.
- To understand the importance of innovative/new programmes in the field.
- To develop an understanding of the role of advocacy in promoting issues and concerns related to human development.

Contents

1. Trends and issues related to processes of development
   - Psycho-motor development.
   - Perceptual development.
   - Cognitive development.
   - Socio-emotional development.
   - Language development.
   - Moral development.

2. Trends and issues related to early child development and early childhood care and education
   - Demographic status, attrition in early preschool/and primary years, gender equality and equity.
   - Issues and concerns related to children in difficult circumstances; street children, adopted children, girl child, single parent children, refugee and migrant children, children with disability and other vulnerable groups.
   - Issues and concerns related to quality in early childhood and primary curriculum.
   - Issues and concerns related to training of ECCE personnel and accreditation processes.

3. Trends and issues related to life span development
   - Infancy
- Early childhood
- Young adulthood
- Adulthood
- Old age

4. **Trends and issues related to family studies.**

*Note*: The course would be based on current readings, understanding of researches and policies and conducted through presentations on various assigned topics by students.
PERSONS WITH DISABILITIES

Code : 54126
Credits: T 1 P 2
Periods/week: 5
Marks: 75

Objectives

- To become aware of various impairments and the manner in which these affect the lives of individuals.
- To identify the physical and social barriers which create difficulties for people with disabilities.
- To understand that there is a wide variation between people with disabilities and they are not a single group.
- To realise that the experiences of individuals with disabilities are related to their age, gender and also shaped by the context.
- To become aware of experiences of persons with disabilities and recognise that having an impairment is only one aspect of their lives
- To develop an understanding of their rights.
- To apply the understanding gained from the experiences of people with disabilities in planning services for them.

Contents

1. Various approaches to defining and understanding disability
   - philanthropic, medical, administrative, legal and the social.
2. Different types of impairments, causes and effects on individuals
   - Physical
   - Intellectual
   - Emotional
   - Sensory
3. The role of context in the meaning of normality and disability, attitudes of people towards disability.
4. The philosophy of inclusion.
5. Techniques of identification and assessment.
6. Physical and social barriers in the development of persons with disabilities, modification of physical and social environment, enabling participation of persons with disabilities as a contributing member of society.

7. Use of assistive devices.

8. The shared and varied experiences of those so affected.


10. Examples of programmes and policies for persons with disabilities.

11. Issues in planning inclusive programmes for persons with disabilities

Practical

1. Review and critique of portrayal of persons with disabilities in the media.

2. Tools and approaches to assessment

3. Case study of two persons with disability- a child and an adult.

4. Case study of an organisation with particular reference to its physical and social environment.

References


Journals

1. Disability and Society

2. Action Aid Disability News

3. Impairment and disability

4. Asia pacific Disability Rehabilitation Journal
MONITORING AND EVALUATION OF PROGRAMMES

Code: 54127
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To understand the need and rationale for effective monitoring of programmes.
- To study the process and strategies for monitoring and evaluation.
- To understand the process of cost benefit analysis.
- To conduct a small scale experiment of monitoring/evaluation of a selected programme.

Contents

1. Components of a programme/project
   - Objectives
   - Population, i.e. clientele for stake holders
   - Implementation process
   - Resource mobilization and funding
   - Administrative structure.

2. Purpose and objectives of monitoring and evaluation
   - Need and utility of monitoring and evaluation toward effective and efficient project management
   - Scope and meaning of monitoring and evaluation.
   - Linkages between monitoring and evaluation.
   - Definition of terms: input, outputs, indicators, impact.
   - Formulating indicators based on programme goals and objectives.

3. The process and techniques of monitoring
   - Delineating goals, facets and indicators for monitoring.
   - Duration and stages of monitoring process
   - Monitoring as a part of Management Information System (MIS).
   - Monitoring Quality
   - Balance in programme core components
   - Quality and community needs
- Quantity and cultural context
- Core quality indicators
- Modifying existing system of monitoring and supervision based on outcomes.

4. **Evaluation and Appraisal of Programmes**
   - Stake holders in evaluation: agency, clients, professional and other staff, community, funding agency.
   - Baseline or Benchmark survey
   - Kinds of evaluations
     - Formative, Summative, Ex-post evaluation
     - Internal and External Evaluation
     - Result oriented evaluation
   - Methods of evaluation
     - Participatory Rapid Assessment (PRA)
     - Participatory Learning Assessment (PLA)
     - SWOC Analysis..
     - Culturally adapted/appropriate evaluation techniques..

5. **Economic Evaluation**
   - Effective use of resource
   - Achieving value for resources/money
     - Time Management efficiency
     - Opportunity cost.
     - Cost minimization analysis (CMA)
     - Cost benefit Analysis (CBA)
     - Cost utility analysis (CSA)
   - Steps in Economic Evaluation
     - Identification of costs and consequences
     - Measurement of costs and consequences
     - Valuation of costs and consequences
     - Incremental analysis
     - Sensitivity analysis
     - Strengths and weaknesses of economic evaluation.

**Practicals**

*Note*: Practicals would include observations of functioning of agency/agencies and conducting a small study of monitoring/evaluation of selected agencies.

**References**

CARE OF CHILDREN WITH DISABILITIES AND ILLNESSES

Code: 54128
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives

- To gain information on different impairments and illnesses that affect children.
- To be sensitive to desires and wishes of children.
- To identify and assess impairment, illnesses, disability and the child’s physical and social environment.
- To plan for inclusive educational programmes for children and involving the disabled child in the process.
- To become sensitive to concerns of parents of children with disabilities and collaborate with them for children’s education and development.
- To interact and relate sensitively with children with disability, accepting individual differences and enable others to do so.

Contents

1. Different types of impairments and serious illness, causes and the effects on children.
   - Physical, intellectual, sensory and emotional impairments
   - Illnesses such as juvenile diabetes, asthma
2. The philosophy of inclusion.
3. Attitudes of others in the family and community.
4. Techniques for identification, and recording progress.
5. Physical, organisational and social barriers in the development of children with disabilities
   - Modification and adaptation of physical and social environment, the meaning of inclusion, enabling participation of children with disabilities in the school and community so that they have a sense of belonging as well a opportunity to become contributing members.
6. Use of assistive devices.
7. Listening to children and including their views in life at school and home.
8. Care of the child in the family, role of parents, siblings and other members.
9. The rights versus needs of the children.
10. Examples of programmes for children with disabilities, innovative projects.

Practical

1. Planning and working with children and parents.
2. Case study of a child with disability.
3. Case study of an organisation for young children with disabilities with particular reference to its physical and social environment.

References


Journals

1. Disability and Society
2. Action Aid Disability News
3. Impairment and disability.
4. Asia Pacific Disability Rehabilitation Journal
HIV/AIDS COUNSELLING

Code: 54129
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives
- To create awareness of the basic concepts in counselling of persons with HIV/ AIDS
- To make them understand psycho-social aspects of HIV/ AIDS in relation to family and community life.
- To develop the skills for counselling for behaviour change in persons living with HIV/ AIDS.
- To develop skills for home based care and counselling for family members.

Contents
1. **Basic concepts and facts about HIV/AIDS**
   - Transmission of HIV infection, signs and symptoms of AIDS
   - Diagnosis of HIV infection
   - Management and Care of HIV infected persons
   - Prevention of HIV infection
   - Ethical issues and dilemmas.
2. **Understanding sexuality, reproductive health and the gender perspective**
   - The human reproductive organs and sexual characteristics
   - Meeting the needs of childhood sexuality
   - Forms of sexual practice, the harmful side of sex: Sexual abuse
3. **Psychosocial aspects of HIV/AIDS. What it means to be a HIV positive?**
4. **HIV/ AIDS counseling**
   - The principles of counseling, goals of HIV/AIDS counseling
   - The prerequisites of counseling, stages of counseling, specific counselling skills
   - Assessment of risk behaviour
   - Characteristics & attitudes of a counselor, the do’s and don’ts in counseling
   - Content of communication about HIV/AIDS.
5. **Some specific counseling situations**
   - The activities of pre-test counseling, the concept of informed consent
   - The types of post-test counseling, the activities of the various types of post-test counseling
   - The psycho-social issues linked with positive diagnosis

6. **Coping strategies of HIV/AIDS persons**

7. **Legal Issues, rights and ethics**

**Practicals**

1. Visit (and write the report) any two HIV/AIDS counseling centres.
2. Collect five case studies and analyse the psycho-social problems in each. Prepare case reports.
   Identify the various high-risk behaviours and discuss the link with HIV transmission, coping with the changing family dynamics.
3. Plan and organise life style education programs for adolescents to cover Nutrition and diet. Exercises for physical and mental health, healthy and responsible sexual behavior and practices.
4. Role plays and street plays (to discuss and understand) on the following:
   - Dealing with stigma
   - Pre and post-test counseling
   - Enhancing values and self-regulation
   - Behaviour change
   - Laws and ethics
5. Collect five success stories of effective coping and discuss in the classroom.

**References**

GUIDANCE AND COPING IN CRISES

Code: 54130
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives
- To create in students the awareness of different types of crises
- To develop insight into the impact and manner of coping with crises situations.
- To develop skills for guidance and promoting intervention programs for coping in crises.
- To understand situational crises and plan and organise specific intervention programs.

Contents
2. Types of crises: natural disasters, man made crisis situations
3. Normal and abnormal events:
   - Normal events/incidence in daily life
   - Abnormal events or crises experiences: at home, at school, in the community
4. The normal reactions to crises events:
   - Normal coping process, common reactions and consequences of traumatic events,
   - Protective & risk factors
5. Guidance and therapeutic interventions for vulnerable/ special groups of children and adolescents
   - Normal developmental stages & basic needs
   - Children in difficult circumstances
   - Separation, loss & death
   - Effect of crises events on different age groups
   - Intervention techniques
   - The role of the family
   - Special issues in treating children

Practicals
1. Plan and conduct therapeutic intervention programmes related to the following (any four)
i. Psychological First Aid, handling specific complaints, motivation for re-organising one's life.
ii. Prevention program for community harmony; avoiding riots and violence
iii. Crises intervention programmes in school
iv. Safety measures for children at home, at school and in the community

2. Conduct classroom debates and discussions on the role of media in crises situation
3. Plan programmes for mental health in crisis situations (preventive and intervention).

References

1. Medicine Sans Frontiers (MSF)
   - Mental health Training Manual
   - Shocking Events and Stressful Situation – Their Emotional consequences. Amsterdam, April 1993

2. Save the Children

3. Schauer, Margarete
   - Posttraumatic Stress (PTSD) and Extreme Stress (DES).
   - First aid Kit for the Mental Health Team providing psycho-social service for the severely traumatized Kosovo Albanians in the Refugee Camps. MSF Mental Health – Macedonia 1999

4. World Health Organization
WOMEN'S STUDIES

Code: 54131
Credits: 2
Periods/week: 2
Marks: 50

Objectives

- To develop awareness regarding status of women in India and sensitivity to women's issues and concerns.
- To understand theoretical and methodological concerns related to women's studies.
- To be aware of issues and concerns related to situation of women with specific reference to the Indian context.

Contents

1. The rationale for Women's Studies
   - Meaning and significance
   - Growth of women's studies in India and other countries.
   - The women's movement in India.
   - Orientation to feminist theories.
2. Theoretical perspectives in women's studies
   - Consequences of gender differences.
   - Sexual division of labour and its implications:
     - discrimination
     - invisibility
     - devaluation.
   - Historical and socio-cultural basis of women's status.
3. Understanding concepts related to gender differences from societal and developmental perspective
   - Patriarchy
   - Caste, class culture and gender interface
   - Gender and education
   - Economic empowerment and gender
   - Development processes and programmes from women's perspective.
4. Feminist methodologies in women's studies
   - Gender sensitive surveys
- Generational studies
- Content analysis of media and literature
- Historical research

5. Problems and issues related to women in India
   - Child marriage
   - Female foeticide, infanticide
   - Female mortality
   - Discrimination in nutrition and health care
   - Socialization of girl child
   - Dowry
   - Violence
   - Women’s identity
   - Educational opportunities and sex-based education
   - Employment
   - Women in Politics
   - Legal status of women

References


TEXTILES AND CLOTHING

Introduction

The Department of Textiles and Clothing prepares the students for careers in the area of Textile Design, fashion and apparel design and for research in the relevant areas of Textiles and Clothing. The study of the design construction of garments, traditional as well as modern costumes are also focussed among the various courses offered by the department. The knowledge of weaving, designing, textile testing, dyeing and printing and other finishes become integral part of the curriculum offered by the discipline. A student in textiles and clothing is well acquainted with the fibre science and fabric and clothing construction. The post graduate programme has been designed to provide the students intensive theoretical and practical knowledge as well as research experience. It is envisaged that the flexibility introduced in the curriculum and the multiple competencies and shall inculcated in the students will prepare them to be professionals in the area of Textile Design and Fashion and Apparel Design with educational and commercial orientation.

The curriculum in Textiles and Clothing has core courses with 28 credits, electives of 20 credits to be selected from the broad range of courses and 12 credits of research component including research methodology, statistics, computer applications and research.

Objectives

1. The department of Textiles and Clothing courses professionally train the students for related to the area of educational, commercial and research establishment.
2. Acquires the skill for selection and design of fabrics and apparel.
3. To train manpower for entrepreneurial management in textiles and clothing enterprises.
4. To train students for fashion designing and commercial marketing.

Eligibility

The candidates should have completed 10 + 2 + 3 with Textiles and Clothing or Home Science at the B.Sc. level. Those who have graduated with any other allied subjects like B. Tech. in Textile Technology/Chemistry, B.Sc. in Textiles Science or Fashion Design, are required to do the remedial course/pre-requisite, if admitted to the programmes.
# LIST OF COURSES

## CORE COURSES

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## ELECTIVE COURSES

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## RESEARCH COURSES

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A total of 60 credits are offered during the 4 semesters with the 3 types of courses viz. core, elective and research. Seminar is compulsory as well as the communication technology. Advanced courses in computer aided textile design are a fascinating area of textiles and clothing discipline. Internship is offered for 6-8 weeks during the course of study or after the completion of the programme, which does not carry any credits.
# M.SC. TEXTILES AND CLOTHING

## Scheme of Instruction

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RESEARCH METHODS AND STATISTICS

Code: 40101  
Credits: T 3 P 0  
Periods/Week: 3  
Marks: 75  

Objectives

- To understand the significance of statistics and research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- To understand and apply the appropriate statistical technique for the measurement scale and design.

Contents

1. Science, scientific methods, scientific approach.
2. Role of statistics and research in Home Science discipline.  
   - Objectives of research: Explanation, control and prediction.
3. Types of Research: Historical, survey, experimental, case study, social research, participative research.
4. Definition and Identification of a Research Problem  
   - Selection of research problem  
   - Justification  
   - Theory, hypothesis, basic assumptions, limitations and delimitations of the problem.
5. Types of variables
6. Theory of probability  
   - Population and sample  
   - Probability sampling: systematic random sampling, two stages and multi stage sampling, cluster sampling.  
   - Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling.
7. Basic principles of Research Design
   - Purposes of research design: Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto,
   - Longitudinal and cross sectional
8. Qualitative Research Methods:
   - Theory and design in qualitative research
   - Definition and types of qualitative research
   - Methods and techniques of data collection
     - informal group discussions
     - interviews: Key informants, in-depth interviews
     - observations
     - social mapping
     - participatory rapid assessment
     - participatory learning assessment
9. Data Gathering Instruments:
   - Observation, questionnaire, interview, scaling methods, case study, home visits, reliability and validity of measuring instruments
10. Scales of measurement and the appropriate statistical techniques.
11. Critical analysis of research.
12. Writing a research proposal.
13. Analysis of data and research report.

References
TEXTILE CHEMISTRY

Code: 45101  
Credits: T 3 P 2  
Periods/Week: 7  
Marks: 125

Objectives
1. To acquaint the students about the polymers of which the textile fibres are made.  
2. To understand the chemistry, production and fundamental properties of natural and synthetic fibres.  
3. To familiarise with the chemical processing from desizing to finishing of textiles and principles.  
4. To acquaint the students with some advanced textile technology.

Contents

Theory

I. Introduction  
1. Why study of textile chemistry is needed.  
2. Why this subject is related to textiles and clothing.

II. Polymer Chemistry  
1. Polymers, methods of polymerisation, polymerisation process.  
2. Definition of co-polymer, oligomer, graft-co-polymer.  
3. Degree of polymerization, molecular weights of polymers and its determination.  
5. Orientation and crystallinity of polymers; their influence on fibre properties.

III. Chemistry Of Cellulosic Fibres  
1. Introduction to cotton, varieties, properties, longitudinal and cross sectional view.  
3. Regenerated cellulosic fibres – viscose rayon, cuprammonium rayon, cellulose acetate, rayon, polynosic – their manufacture, properties and uses.
IV. **Protein Fibres – Wool & Silk**
1. Chemical composition, molecular structure, physical and chemical properties, action of acids, alkalis and other chemical on protein fibres.
2. Brief description on, felting of wool, degumming and weighting of silk, shrink proofing of wool.

V. **Synthetic Fibres – Polyester, polyamide and acrylonitrile fibres.**
1. Chemistry of the fibres – raw material, manufacturing process from polymer to fibre stage.
2. Physical and chemical properties of all the fibres and their uses. Examples of commercial production in India.
3. Blends of different fibres, composition and properties and uses in textiles and clothing.

VI. **Other natural and synthetic fibres.** Their chemical composition, properties and uses viz. jute, flax, hemp, tencel, polyethylene, polypropylene, carbon, polycarbonate, metallic, glass fibre and polyurethane fibres.

VII. **Scientific basis of dyeing and printing of textiles**
1. Classification of Textiles dyes, commercial dyes, C.I. constitution number and C.I. generic number.
   - Theory of dyeing
   - Chemical structures of various classes of dyes
   - Application of dyes on various substrates including blends

VIII. **Textile finishing**
- Classification of finishes
- Mechanical finishes
- Chemical finishes – Mercerisation, parchmentisation, durable press, wash ‘n’ wear, wrinkle recovery, chlorination.
- Resins, their application and chemistry
- Special purpose finishes
- Flame retardant, water repellent, antistatic, stain and soil release, moth proofing.

IX. **New Development in fibres manufacture**
- bicomponent and biconstituent fibres
- special purpose fibres

**Practicals**
1. Identification of fibres – cotton, polyester, viscose, polyamide, silk, wool, jute, etc. use of burning test, microscopic examination, chemical tests, solubility and staining tests.
4. Dyeing of cotton (yarn) with direct, reactive and vat dyes (one each) by exhaust method. Dyeing of polyester with a disperse dye in high temperature and high pressure (HTHP) dyeing technique. Dyeing of wool and silk with an acid dye by exhaust method. Dyeing of acrylic fibre with a basic cationic dye by exhaust method.
5. Use of natural dyes and mordant.
6. Study chemical properties of fibre as related to textile finishing
   - Chlorination of wool
   - Mercerisation in cotton
   - Felting of wool
   - Weighting of silk
   - Degumming of silk
   - Permanent pleating on PET
7. Determination of strength of bleach liquor
8. Determination of hardness of water
9. Determination of alkalinity in soap solutions
10. Mill visit to acquaint student with modern chemical processing.

References
11. India Horti business on line, http://www.agroindia.org/1HOL.
APPAREL DESIGN AND CONSTRUCTION

Code: 45102  
Credits: T 1 P 3  
Periods/week : 7  
Marks: 100

Objectives
1. To impart an in-depth knowledge of style reading, pattern making and garment construction techniques.
2. To develop and understand the principles of pattern making through flat pattern and draping.

Contents

Theory
1. Detailed study of industrial machines and equipment used for
   • Cutting
   • Sewing
   • Finishing
   • Embellishment
2. Study the interrelationship of needles, thread, stitch length and fabric
3. Methods of pattern making
   • Drafting
   • Flat pattern
   • Draping
4. Developing paper pattern
   • Understanding the commercial paper pattern
   • Layouts on different fabrics, widths and types
5. Buying criteria for
   • Knits, silks, denim and other special fabrics
   • Readymade garments
Practicals

1. Designing through flat pattern – Dart manipulation
2. Development of variation in sleeves
   - Sleeves and bodice combinations
3. Development of variations in collars
   - Roll over collar
   - Collar with bodice (shawl)
4. Necklines and facings
   - Scooped necklines
   - Built-up necklines
   - Cowl necklines
5. Plackets
   - Center button closing
   - Asymmetrical closing
   - Double breasted
6. Development of paper pattern and construction of garments
   (using checks, stripes, unidirectional and novelty fabrics)
7. Designing through draping
   - Basic draping principles and techniques
   - Developing a pattern
8. Fashion Sketching
9. Term Garments - 2

References

1. Armstrong, Pattern Making For Fashion Design.
2. Gioello and Berke: Figure Type And Size Range, Fairchild Publications, New York.
8. Natalie Bray: Dress Fitting Published By Blackwell Science Ltd.
STATISTICS AND COMPUTER APPLICATIONS

Code: 40102
Credits: T 2 P 1
Periods/week: 4
Marks: 75

Objectives
- To understand the role of statistics and computer technology in research
- Apply statistical techniques to research data for analyzing and interpreting data meaningfully

Content
1. Conceptual understanding of statistical measures classification and tabulation of data, ratio, proportion and percentage. Measurement of central tendency, mean, median, mode, variance, mean deviation, standard deviation, coefficient variation, percentile
2. Frequency distribution, histogram, frequency polygon, olives
3. The formal and empirical concepts of probably and the binomial distribution. Normal distribution, use of normal probability tables.
4. The sampling distribution and the standard error
5. Parametric and non parametric tests
7. Distribution of Chi Square. Goodness of fit independence of attributes 2 x2 and r x c contingency table, other non parametric test – sign test, median test etc.
8. Application of student & t-test for small samples for single mean difference in proportion for means and difference in mean.
9. Correlation, coefficient of correlation, rank correlation regression equation and prediction.
10. Analysis of variance –
    One way classification
    Two way classification
11. Experimental design
    - completely randomized design
- randomised block design
- latin square design
- factorial design 2x2; 3x3
- trend analysis

12. a. Computer fundamentals –
   - components of a computer;
   - input/output devices;
   - number system decimal;
   - binary

b. Representation of information – BCD, EBCDIC, ASCII
c. Representation of data – field records, files, file organization & Access
d. Application of -
   - MS DOS;
   - Word Processing;
   - DBase
   - SPSS

Reference
1. Garett Henry E. Statistics in Psychology & Education David Mekay
2. Edwards Experimental Design in Psychology Research
3. Snedecor GW Statistical Methods 9th ed. Iowa State University
HISTORIC TEXTILES

Code: 45103  
Credits: T 3 P 1  
Periods/week: 5  
Marks: 100

Objectives

- To gain knowledge of the significant developments in production of textiles in the world.
- To assess similarities and dissimilarities in different civilizations in terms of fibre production, ornamentation and usage.
- To study textiles of historical significance which influenced other cultures & civilizations.

Contents:

Theory

1. Importance of textiles in historical perspective – early fibres and their products, their use in early civilizations - India, China, Egypt, Mesopotamia, Persia, Crete, Greek, Rome and Peru.
2. Development of different fibres – cotton, silk, wool, linen in different countries of significance – in terms of processing, tools & equipment used, design and ornamentation applied and specialties achieved.
3. Development of embroideries from ancient times – India China, Europe, Persia, Latin & South America - techniques, designs & usage
5. Historical textiles of special significance
   - Carpets
   - Tapestries
   - Brocades
   - Laces
   - Shawls
   - Resist dyed and ikat fabrics
   - Printed & painted fabrics
Centers of development, historical impact on other areas, specialities achieved, techniques developed, ornamentation – colour, designs applied & articles produced

Project

1. Preparation of portfolio of designs of different textiles
2. Prepare and present term paper on any one or two areas.

References

11. Lewis Ethel: Romance of Textiles.
FABRIC CONSTRUCTION AND WOVEN FABRIC ANALYSIS

Code: 45104  
Credits: T 3 P 2  
Periods/week: 7  
Marks: 125

Objectives

- To enable students to understand and learn methods of developing fabrics using different fibres, yarn, and fabric making techniques.
- To gain knowledge and understanding of fundamentals of weaving machinery and processes.
- To analyse different weave patterns and learn principles of creating design through weaving.

Contents

Theory:

1. Principles of yarn manufacture – yarn processing  
   - For natural fibres – cotton, wool & worsteds, jute, linen by conventional systems and recent developments like:  
     a. OE Spinning – Rotar, Vortex, Friction, Airjet Electrostatic, Twistless (Bobbtex, cover, signal twilo)  
     b. Self twisting  
     c. Fasicated  
     d. Yarn from fibres  
     e. Laminated yarns  
   - Yarn nomenclature and measurement – Yarn numbering systems  
   - Geometry of different classes of yarns and its relationship to fabric properties

2. Modern developments in yarns and at their manufacture  
   - Modern yarn production – principles of spinning in production of man made fibre; hot & cold drawing; spun yarn; blend yarn and bicomponent yarn  
   - Textured yarn technology- principles methods and process variables in texturing & their effect on properties of textured yarns ; morphological changes induced by texturing.
- Core yarns, network and film yarns and laminated yarns.
- Designing through variables in yarns.

   a. Weaving
      - Parts and functions of the handloom
      - Types of weave – basic & decorative
   b. Knitting
      - Knitting machines, types of knitting
      - Properties
   c. Felts & Non wovens
      - Knotting, braiding and lace making
   d. Introduction to Technical Textiles – geo textiles.


5. Woven: Sequence of operations in warp and weft preparations:
   ● Various types of looms and their drive.
   ● Fabric classification and analysis of fabrics for its construction weaves.
   ● Basic and decorative weaves plain, twill and satin derivatives. Dobby and jacquard shedding and weaving terrypile.
   ● Principle of colour and design in weaving: preparation of pattern for dobbý and jacquard looms; brocade, damask, tapestry, warp and weft pile weaving.
   ● Textile design through weaving.

Practical

2. Weaving on simple loom, plain, rib, matt and twill structures.
3. Fabric analysis for design, repeat, draft, peg plan and other details.
4. Creating designs for stripes, checks, dobbý and jacquards.
5. Visit to weaving mills.

References

1. Spun Yarn Technology – Eric Oxtoby Butterworth Publication
2. American Cotton Handbook – Merrill
6. Irene Waller: Designing With Threads.
      - Woven Fabrics
      - Knitted Fabrics
   b. Fabric structure (86 – 94)
10. Book - Textiles
    - Year 1998
    - By A.F. Barker
    - Chapter 7, Principles of Weaving
    - Pg. 154 – 171.
ADVANCED APPAREL CONSTRUCTION

Code: 45105  
Credits: T 1 P 2  
Periods/Week: 5  
Marks: 75

Objectives
- To help develop skills in pattern making and construction
- To create awareness of quality assurance norms and evaluating of quality in apparel

Contents

Theory
1. Fitting - factors affecting good fit, common problems encountered and remedies for fitting defects (upper and lower garments)
2. Clothing for people with special needs
   - Maternity and lactation period
   - Old age
   - Physically challenged
3. Evaluating the quality of apparel
   - Identification of the components of apparel
   - Fibre content, shaping devices, underlying fabrics, pockets, necklines, hem treatments, decorative details and alteration potential
   - Standards for evaluating the various components

Practicals
1. Development of slopers for skirt variations
   - Low and high waist
   - A line, flared, circular, pleated, yoked with godet/pepulum
   - Skirt band - separate band, faced waist line
2. Pockets
   - Slashed pockets - welt, bound flaps
   - Inseam pockets : closed and open
3. Placket
   - Fly front opening
   - Zipper in seam, without seam
4. Designing, drafting and construction of skirts
5. Fashion sketching
6. Term garments

References
2. Natalie Bray Dress Fitting Published By Blackwell Science Ltd.
TEXTILE INDUSTRY IN INDIA

Code: 45106  
Credits: T 2 P 0  
Periods/week: 2  
Marks: 50

Objectives

- The aim of this paper is to acquaint the student with the multifaceted profile of the textile industry of India, the economic regime and policy regulations within which the industry is operating.

I. Business Environment of India  
II. Importance of Textile and Clothing Industry in the Indian economy in terms of domestic consumption, employment and per capita income, gross national product & international trade.  
III. National Textile Policy 1986, 2001 – change in focus over the year in terms of objectives, function ability, regulatory mechanisms and futuristic trends.  
IV. Foreign Trade Policy – the mechanism of MFA – history and current status, WTO, Implications of a free trade regime vs protectionist regime.  
V. The textile and clothing industry – in relation to production & consumption pattern, locale, employment potential, R&D, problems and prospects: cotton, wool, silk, rayon & synthetic industry, handloom industry, readymade garment industry and technical textiles.

References

3. Journals – Clothesline, Business India, Business Today etc.  
5. Industry Published Journals/ Newsletters e.g. from SASMIRA, WVEPC, HHEC, etc.  
6. Economic Surveys, Govt. Of India.
CURRENT TRENDS AND ISSUES IN TEXTILES AND CLOTHING

Code: 55108
Credits: T 2 P 0
Periods/Week: 2
Marks : 50

This course will focus on the current and emerging relevant issues and trends in the discipline. The methodology used for the purpose would be students seminars.
COLOUR SCIENCE AND INSTRUMENTATION

Code: 45109  
Credits: T 2 P 1  
Periods/Week: 4  
Marks: 75  

Elective

Objectives

1. To develop an understanding of the scientific aspects of colour, difference between dye and coloured compound.
2. Understanding of colour formulation, assessment of colour differences, colour, sorting techniques and colour perception.
3. To understand theory of colour measurements in solution and on textiles and the instruments used for colour measurement.
4. To acquaint students with the recent developments regarding eco-regulation and banned dyes.

Contents

1. Nature of light:
   ii) Relation between colour and chemical constitution of dyes, to acquaint with colour index.
   iii) Instruments for the measurement of colour, principles of spectrophotometry, early colorimeter, absorption spectroscopy, Beer-Lambents law, single beam and double beam spectrophotometer.
   iv) Colour mixing system, colour order system, CIE Colour specifications, Illuminant, yellowness Index and whiteness index, reflectance spectrophotometer, Kubelka-Munk Theory, Relation between K-S and concentration of colourant, understanding colour difference, hue, chroma etc.
   v) Introduction to chromatography and basic instrumentation; Application of Thin layer chromatography, HPLC and GC in dye analysis.
Practicals

1. Identification of dyes, direct, reactive, vat, acid, azo, disperse and natural dye.
2. Use of colorimeter/spectrophotometer for natural dye determination of dye content on textiles through optical density measurement, calibration curve.
3. Demonstration of reflectance spectrophotometer for colour data measurements, whiteness and yellowness index.
4. Visit to other institutes for demonstration of sophisticated instruments.

References

1. Colour physics for industry, Ed., by Roderick McDonald, Published by the Society of dyers and colourists.
DRAPING AND PATTERN MAKING

Code: 45110  
Credits: T 0 P 3  
Periods/Week: 6  
Marks: 75  

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

Contents
1. Introduction to draping and silhouette of the individual—Dress form, Elements of fabric – woven, knitted.  
2. Development of the ladies block crotch line garments by drafting and draping (shorts, Bermudas, trouser etc.).  
3. Development of pattern with variation in  
   - One piece dresses  
   - Two piece dresses  
   - Dart less dresses  
   (Incorporating various, collars, sleeves, yokes, necklines, pockets and plackets etc).  
4. Draping of bodice block and skirt block and their variation.  
   - Draping of asymmetrical designs and preparing patterns.  
5. Pattern markings, pattern envelope and guide sheet.

References:  
2. Pamela C. Stinger, Pattern drafting for dressmaking.  
FASHION ILLUSTRATION

Code: 45111
Credits: T 0 P 2
Periods/week: 4
Marks: 50

Objectives

Focuses on design details, creation of styles and rendering techniques using the different media. Pencils, pens, markers, charcoal, brushes, colours, papers.

Fashion Illustration
1. **Sketching of different action croqui (based on the basic figures learnt earlier)**
2. **Garments and Garment Details:**
   - Necklines and collars
   - Sleeve details
   - Skirts and pants
   - Blouses, coats and jackets
   - Drawstring and fastenings
   - Tassels and tucks
   - Frills, fringes and gathers, cowls & cascades
   - Hemlines and insertions
   - Lacing, macrames and patch work
   - Pleats, quilling and ties
   - Shirring, smoking and zips
   - Yokes and underskirts

3. **Sketching of Accessories:**
   - Hats and head gears
   - Footwear
   - Bags and purses
   - Jewellery

4. **Basic Rendering Techniques:**
   - Colour matching using different mediums
   - Stripes
   - Checks, gingham and plaids
   - Patterns and textures
   - Reducing a print
   - Shading
5. **Theme Rendering**: developing a line of garments based on a theme (any one of the following)
   - Beachwear
   - Swimwear
   - Casual wear
   - Sportswear
   - Nightwear
   - Cocktail wear
   - Evening wear
   - Ramp wear
   - Executive wear
   - Traditional Indian Costume

**References**

4. Ireland, Patrick John, Fashion Illustration, B.T. Batsford Ltd London.
MANAGEMENT AND BUSINESS ADMINISTRATION

Code: 45112
Credits: T 2 P 0
Periods/Week: 2
Marks: 50

Elective

Objectives

- To develop personal and professional performance and confidence.
- To develop awareness and improvement in administrative and managerial skill.
- To acquaint the students with Human Resource Development through personal relation.
- To become familiar with Financial Management.

Contents

1. Office Management – Organizational Structure and Staff Responsibilities.

Information Technology – Use of Computers in Administration and Internet for Data Collection and Correspondence.
References

5. Management is the Name of the Game, L.G. Kulkarni, India Book House, Mumbai.
SCIENTIFIC WRITING

Code: 45113
Credits: T 2 P 0
Periods/Week: 2
Marks: 50

Objectives
- To be able to appreciate and understand importance of writing scientifically.
- To develop competence in writing and abstracting skills.
- To write either a draft research proposal or a chapter of dissertation.

Contents
1. Scientific writing as a means of communication.
   - Different forms of scientific writing.
     - Articles in journals, Research notes and reports, Review articles, Monographs, Dissertations, Bibliographies.
2. How to formulate outlines.
   - The reasons for preparing outlines
     - As a guide for plan of writing
     - As skeleton for the manuscript
   - Kinds of outline
     - Topic outlines
     - Conceptual outline
     - Sentence outlines
     - Combination of topic and sentence outlines
3. Drafting Titles, Sub Titles, Tables, Illustrations.
   - Tables as systematic means of presenting data in rows and columns and lucid way of indicating relationships and results.
   - Formatting Tables: Title, Body stab, Stab Column, Column Head, Spanner Head, Box Head
   - Appendices: use and guidelines
4. The writing process
   - Getting started
- Use outline as a starting device
- Drafting
- Reflecting, Re-reading
  - Checking organization
  - Checking headings
  - Checking content
  - Checking clarity
  - Checking grammar
- Brevity and precision in writing
- Drafting and Re-drafting based on critical evaluation

5 Parts of Dissertation/Research report/ Article
- Introduction
- Review of Literature
- Method
- Results and Discussion
- Ask questions related to: content, continuity, clarity, validity internal consistency and objectivity during writing each of the above parts.

6 Writing for Grants
- Clearly state the question to be addressed
- Rationale and importance of the question being address
- Empirical and theoretical conceptualization
- Presenting pilot study/data
- Research proposal and time frame
- Clarity, specificity of method.
- Clear organization
- Outcome of study and its implications
- Budgeting
- Available infra-structure and recourses
- Executive summary

References


TEXTILE TESTING AND QUALITY CONTROL

Code: 55107
Credits: T 1 P 2
Periods/week: 5
Marks: 75

Objectives

- To develop an understanding of methods and technique used to analyse textile fibre, yarns and fabrics for end-use performance.
- To acquire knowledge and understanding of various structural properties of textiles and relate them to end-use fabric performance and product.
- To familiarise students with the different testing equipments, their underlying principles and the international accepted standards, test methods and the language of measurement.
- To be able to analyse and interpret the results and predict the general textile testing.

Contents

Theory

I. Introduction to Textile Testing
   - Concept and scope
   - Application areas
   - Use of statistics in data management
   - Sampling procedures

II. Total quality management (TQM) approach in the field of Textiles & Clothing.

III. Standardisation
   - Organisations for Standardisation (National and International).
   - Quality control of Textile products.
   - Quality standards as applicable to various types of textiles (Garments, yardage, knits, woven, carpets, processing, dyeing).

IV. Properties of textiles at different stages of processing and their principle of measurement.
   - Fibres – length, fineness, evenness
   - Yarn – strength, evenness, openness, load, elongation, crimp.
Postgraduate Home Science

- Fabrics - strength, elongation, shrinkage, thickness, cover, air permeability, crease recovery, weight, comfort, stiffness, flammability, repellency, colour fastness.
- Garment Finishing – Colour fastness, shrinkage
- Concept of Fabric faults as related to stages of manufacture and the remedies.

V Concept of Statistical QC

- Sampling
- Test methods used
- Tolerance limits, CV%

Practical

I Physical Testing of Textiles using appropriate standardised procedures

- Fibres – length, diameter, fineness
- Yarn – count, heaviness, twist, crimp, strength
- Fabric – Thread count, thickness, air porosity, abrasion, strength [Tensile Tear Bursting], water vapour permeability, cover, stiffness, drapability, crease recovery, pilling, abrasion.

II Chemical Testing

- Identification of fibres.
- Binary Fabrics – Blend composition.
- Shrinkage, water, oil repellency
- Sensitivity to various reagents.

III Dyes

- Identification of dye class
- Colour Fastness

IV Mechanical Testing

- Seam Strength
- Identification of fabric weave, Thread count.

V Inspection Of Final Garment

References

5. ISI Specifications, BiS Specification.
6. ASTM Standards.
DYEING AND PRINTING

Code : 55114
Credits: T 3 P 3
Periods/week: 9
Marks: 150

Objectives

1. To impart the knowledge about preparation of fabric for dyeing & printing.
2. To understand the theory of dyeing in relation to various classes of dyes.
3. Application of various dyes & properties related to it.
4. To introduce the concept of dyeing at commercial level.
5. To inculcate awareness of the different methods of printing and appreciate the technical advantages of each.
6. To develop technical competency in printing with different dyes on different fabrics.

Contents

Theory

1. Preparation of fabric for dyeing & printing
   - Scouring, bleaching, designing
   - Reagents used & their application
   - Specific preparatory steps for cotton, wool, silk & man made fibres
   - Equipment used at cottage & industrial level for yarn, fabric & price goods
2. Dye
   - Classification, definition, components
   - Colour & chemical constitution of dyes
   - Dyeing with chemical dyes
     a. direct, reactive, vat, sulphur, azo [for cellulosic]
     b. acid, metal compex, chromemordent [for protein]
     c. basic, nylomine, disperse [for man-made]
   - Dyeing with natural dyes
   - Use of pigments
   - Dyeing machines for fibers, yarns & fabrics
   - Industrial dyeing practices
Postgraduate Home Science

- Dyeing auxiliaries & their uses
- Dyeing of blends

3. Textile design through dyeing
   - Tie & dye
   - Batik
   - Union & Cross dyeing

4. Dyeing defects & remedies

5. Introduction to printing – difference between dyeing and printing.

6. Methods of printing
   - Historical development of printing methods – block stencil, screen roller and rotary screens used at cottage and industrial level.

7. Printing pastes – Thickening agents and auxiliaries for printing and their suitability to various classes of dyes and fibres. Preparation of printing pastes for different dyes and different fibres.

8. Styles of Printing
   - Direct style, dyed, resist or reserve style, discharge style and raised style.
   - Styles and methods of printing traditionally used in India.

9. Special printing procedures
   - Polychromatic dyeing, transfer printing, carpet printing, flock printing.

10. Finishing and after treatment of printed goods at cottage and industrial level.

Practicals

1. Preparation of fabric for dyeing & printing

2. Dyeing of yarns & fabric with different classes of dyes, in fibre & fibre blends (variables – MLR, con, temp, leveling/exhausting agents)
   - Direct, reactive, vat, sulphur, azo
   - Acid, chrome, metal complex
   - Basic, disperse
   - Natural dyes

3. Preparation of fabric for printing – different fibre groups with different dyes, different styles of printing.

4. Preparation of screens for printing

5. Printing with blocks and screens on cotton, silk, wool and cotton:wool, cotton silk and cotton polyester blends in different styles with different dye classes.
   - Direct style
   - Mordant or dyed style, Azok style
   - Discharge style
   - Resist style
● Raised style
● Transfer printing

6. **Finishing the printed goods**
7. **Reports of visits to processing and printing units – cottage and industrial level.**

**References**

8. ASTM and ISI Standards.
9. K. Venkatrama (1970), *Chemistry of Synthetic Dyes, Part I and II.*
KNITTING TECHNOLOGY

Code: 55115
Credits: T 2 P 1
Periods/Week: 4
Marks: 75

Objectives

- To gain experience in hand knitting and machine knitting.
- To know about Indian knitting industry.
- To develop an understanding of the various knitting structure.
- To understand stitching of knitted garments.

Contents

Theory

1. Introduction to knitting – definition of knitting, basic structural terms and principle of knitting technology. Difference between knits and woven.
2. Development of knitting from hand knitting to machine knitting and further developments.
3. Indian knitting industry – past, present and future.
4. Basic mechanical principles of knitting technology, elements of knitted loop structure, four primary base structures (plain, rib, interlock, purl).
5. Weft knitting and warp knitting – terms and definition used related and warp knitting, comparison of weft and warp knitting, classification of weft knitting machines and warp knitting machines.
7. Warp knitting – development of warp knitting machines, basic warp knit structures and their representation, patterning mechanisms for warp knit designs, yarns for warp knits, general calculations for warp knits. Tricot and Raschel knits – principle, machines and production methods.
8. A. The structure of a flat knitting machine:
   1) Needle bed assembly.
   2) The carriage.
3) Yarn feeding.
4) Needle brushes.
5) Fabric take-down.

B) Manual operation of a flat knitting machine and circular knitting machine.

9. Knitted structures, structured knits, Jacquard knitting, intarsia knitting – Basic principle and stitches and their application.
10. Electronics in knitting.
11. Knitted garments – Cutting, stitching & quality Control of Knitted garments.

Practicals

1. Learning to operate the flat knitting machine and circular knitting machine.
2. Making knitted samples with the 4 basic stitches (plain, rib, purl and interlock).
3. Analysis and testing of knitted samples.
4. Yarn calculations for weft and warp knits.
5. Visits to different knitting units.

References

3. Dr. Samuel Raz – Flat Knitting Technology, Germany.
TEXTILE DESIGN (STRUCTURES)

Code: 55116
Credits: T 0 P 3
Periods/week: 6
Marks: 75

Objectives

- To develop awareness and appreciation of art & aesthetics in textiles
- To impart creative and technical skills for designing textiles with special emphasis on structural design

Contents

1. Design analysis
   - Structural and applied design variation in fibre, yarn and fabric construction, embroidery, dyeing, printing and finishes
   - Principles of design – harmony, balance, proportion, rhythm and emphasis
   - Elements of design – line and form, colour and texture
2. Sources of inspiration for basic sketching and painting: nature, religion and mythology, arts and crafts architecture.
3. Understanding the tools and equipment and their appropriate use for sketching, painting and achieving textural effects.
4. Process of designing
   - Motif development – geometrical, simplified, naturalized, stylized, abstract and ornamental
   - Big and small motifs – enlargement and reduction, growth of a motif
   - Colour consideration – colour harmonies and colour ways
5. Creation of patterns and designs
   - Combining motifs a) big and small and b) different sources
   - Placement and repeats for all over patterns
6. Introduction to related computer software
7. Creating designs (6 - 8) for different fabrics through variation in fibre, yarn and fabric construction techniques. Each design would have 3 - 4 colourways
8. Portfolio development
References

SOCIAL AND PSYCHOLOGICAL ASPECTS OF CLOTHING

Code: 55117
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Objectives

The aim of this course is to study the psychological effects of clothing on the individual in social situations.

Contents

1. Origin of Clothing
   - Why costumes differ all over the world, material aspects and climate.
   - Religious influence
   - Events of the world
   - Clothing symbols
2. Socialisation and development of the self
   - Social norms
   - Attitudes and value formation
   - Individuality and conformity
   - Person and group identification
3. Personality theories
   - Sigmoid end – defense mechanisms
   - Jung
   - Murray

References

HISTORIC COSTUME AND HISTORY OF FASHION

Code: 55118
Credits: T 3 P 0
Periods/week: 3
Marks: 75

Objectives

- To acquaint students the prevailing designs of costume worn by people of different countries during different periods.
- To develop sensitivity and understanding towards historic silhouettes and designs.
- To enable students to discuss about major political, economic and social happenings in the 20th century and their influence on fashion industry.
- To learn about the designers of international fame and their contribution to the fashion of today.

Contents

Theory

1. Clothing – origin & reasons
2. Costume in ancient civilization
   Emphasize on fabric, garment features, use of colour decoration and accessories
   - Indian
   - Egyptian
   - Greek
   - Roman
3. Medieval costumes of court, upper class and peasant during 12th to 17th century
   - French
   - European
   - English
4. Costumes of China & Japan
5. Growth of the Costume: Terminology fashion concepts, its creation and analysis.
   - Mass production of clothing
6. Costume from 1880 – 2001
   - French
Postgraduate Home Science

- Italian
- English
- American
- Japanese
- Indian

7. Fashion Designer and his role
   - Fashion forecasting
   - Design Development
   - Line Presentation

References

2. Boucher Francois, A History of Costume in the West Thames and Hudson.
PATTERN MAKING AND GRADING

Code: 55119
Credits: T 0 P 3
Periods/week: 6
Objectives: 75

Objectives

- To develop an understanding of a sample pattern using industrial sample room procedure (emphasize in men garments).
- To develop an understanding of the use of design elements in the process of range development.

Practicals

1. Developing drafts for Men's garments:
   - Gents shirt – Formal, casual
   - Gents trouser/shorts
   - Gents jacket
2. Introduction to grading
   - Terminology
   - Methodology – track or stack method.
   - Procedure for grading blocks to various sizes.
   - Children – bodice block, sleeve block, skirt & shorts block.
   - Women - bodice block, sleeve block, skirt & short block.
3. Preparation of Portfolio
   - Grading standard size blocks to various sizes.
   - Preparing 2 patterns (trouser /short and shirt) with complete sets of markings.
   - Designing and preparing pattern envelope (front and back)
   - Preparing markers for 3 different fabric width and designs (stripes, plaids)
   - Preparing guidesheet.
   - Preparing 3 accompanying pattern promotional items.

References

FASHION DESIGN

Code: 55120
Credits: T1P3
Periods/week: 7
Marks: 100

Objectives

- The course aims at providing in-depth working knowledge of line development and enables a student to use and practice skills and knowledge already acquired and use it to market situation.

Contents

Theory

1. Elements used in creating a design.
2. Composition –
   - with one element.
   - with more than one element.
4. Harmony – in form of space coverage to design of the dress.
5. Components of fashion:
   - Silhouette
   - Details
   - Colour
   - Fabric
   - Texture
   - Seams
   - Trims
6. Fashion Forecasting.
7. Study of markets and segments
Practicals

1. Sketching
   - Sketching of different action croquis (front, back and side view) (Computer Application).
   - Garment and garment details.
   - Accessories.

2. Draping
   Draping of bodice and its variation (princes scam, dart manipulation, yokes etc.)

3. Developing a line of garments on a theme (any one of the following).
   - Casual wear
   - Sports wear
   - Cocktail wear
   - Executive wear.

4. Sketching
   - Basic rendering techniques.
   - Developing a line of garments based on a theme.

5. Understanding and sketching theme based on fashion forecast.
   - Sourcing of raw materials.
   - Developing line, based on fabric and theme selected
   - Spec sheet study
   - Sampling
   - Garment analysis
   - Costing – construction of garments
   - Line presentation
   - Use of sale promotion material

Designing of 5 garments for selected theme drafting and making patterns for the same. Construction of any 1/2 garments.

References

FASHION RETAILING

Code : 55121
Credits: T 3 P 0
Periods/week : 3
Marks: 75

Objectives
- To understand the dynamics of fashion and role of fashion designers
- To develop understanding visual merchandising and its importance in today's consumer market.
- To gain knowledge about the management aspect of retailing.

Contents
1. The Dynamics of Fashion
   Fashion Terminology, Fashion Cycle, Fashion Adoption Theories, Fashion Forecast, the role of designers in merchandising.
2. The Concept of Retailing
   Definitions, Role of retailing in merchandising, the retail mix, retail environment, types of retail stores.
3. Elements and Principles of Art and Design
   Elements of Design : Colour, texture, line, form, space
   Interpretation for designing a retail store.
4. Visual Merchandising
   - Plans and schedule – seasons, holiday promotions, sales, themes /ideas.
   - Types of Displays – Window displays, interior displays.
   - Elements of Display – The merchandise, the backdrop walls and shelves, mannequins and forms, signage lightings – illumination levels, relation to colour.
5. Planning and Budgeting for a Retail Store
   Maintenance and ordering of stocks, preparation of sales reports.
6. Recruitment and Management of Sales Force, Types of compensation packages for sales force, Personal Selling as a means of Promotion
References

ECOTEXTILES & ENVIRONMENT

Code: 55122
Credits: T 2 P 0
Periods/Week: 2
Marks : 50

Objectives
1. To acquaint the students about the quality of various textile items as per International Standard ISO 9000 for exporting to the European and other sophisticated global market.
2. To create awareness about the toxic and harmful substances being used in textile processing and need to avoid them.
3. To acquire knowledge on Eco-auditing, Eco-labelling and Eco-Management.

Contents
2. Oeko-Tex Standard 100.
4. Red listed chemicals as per Eco-specification, Testing of Textiles and auxiliaries, effluent discharge.

References
5. The Dystuff Manufacturer's Association of India (1996): "Directory of safe dyes conforming to German consumer Goods Ordinances".
TEXTILE DESIGN (APPLIED)

Code : 55123
Credits: T 0 P 3
Periods/week: 6
Marks: 75

Objectives

This course is a follow up of Textile Design (Structure) and focuses on Applied Design.

- To impart understanding of different media of application – embroidery, dyeing (tie and dye and batik) printing (stencil, block, roller and screen-printing) and special finishes.
- To equip the students with technical skills of designing competency for different media of application.
- To develop a professional approach towards the thematic designing for textiles.

Contents

1. Review of the skills and approaches to design and their role in textile design for industry.
2. Creating motifs designs and patterns for different usage's.
3. (a) Creating designs for application through Blocks, Stencils, rollers and screens.
   (b) Colour separation for above.
4. Thematic approach to design – preparation of theme chart/board – including inspiration and expression, colour story and texture indications.
5. Introduction to related computer software.
6. Portfolio development
   - Portfolio to consist of 8-10 themes e.g. state or country, industry, nature, texture, colour, emotion, life style, season, festival etc. with theme chart, 2 designs for each theme, 3-4 colour ways for each design.
   - Presentation of the above indicating fibre, yarn and fabric variation, media of application and recommended usages.

References


CAD IN TEXTILES AND FASHION

Code : 55124
Credits: T 1 P 3
Periods/week: 7
Marks: 100

A. COMPUTERS IN TEXTILES DESIGN

Objectives

- To enable student to develop different styles of weaves, making punch cards from the graphs.
- To enable students to learn scanning of already printed fabrics and the process of printing out colour separations.

Contents

This course will also be divided into two broad categories, Basic and Advanced

- **Basics** – this part will remain same as that of the Fashion Designing, the only difference will lie in the kind of assignments given, the usage of the tool will remain the same only the final product made out of it will differ, it will be more of textile design oriented than fashion oriented.

- **Advanced** – in the advanced course using the specialized software the students will be able to create any pattern related to textile design. Using different types of yarn, weaves and knits available in the software. Making the design and its graph. Specification of picks and ends, yarn count for weaving on the computer – Dobby, Jacquard pile, carpet and knits. The innumerable styles of weaves, plain as well as the design weave. Making punch cards from the graphs. Stimulation of various yarns like novelty, fancy and weaving them on the monitor to get different fabrics with specified end use. Also deeper understanding of colours and setting designs in different repeats and colour combination. Fitting the repeat according to the method and application of printing – roller, screen, block etc. Also students will learn scanning the already printed fabric, reducing the colours manually or by automatic colour reduction. Learning the process and printing out colour separations.
Textronics Design Systems - Software
- Design Studio – CAD system for textile prints design.
- Design Jazquard – CAD system for jacquard woven fabrics.
- Design Desk Pro- CAD system for Dobby woven fabrics.

Koperman - Textile related software
- Tex – Knit : Same as that for fashions, where emphasis is more on the draping aspects but in Textiles, the stress is more on creation of innovative knitted fabrics.
- Tex – Check : software for creation of woven design of all kinds, using all possible yarn types.
- Standard Product data Management : Same as that for fashion.

Besides this, the students in every module will also do portfolio collection and presentation.

The basic course for both fashion and textiles can be for 30 hours and the advanced course for rest of the 60 hours.

B. COMPUTERS IN FASHION DESIGNING

This course is designed keeping in mind that the students know the basics of the computer and Fashion and Textile designing.

Objectives
To enable students to work on computer for fashion illustrations.
This course will be broadly divided into two categories : Basic and Advanced

- Basic – In this the students are made aware of two basic software’s Corel Draw, a vector based software (Latest Version) –Module I and Adobe PhotoShop, a bitmap based software (Latest Version) Module II .

Module I – With the vector based sketching software students learn to make use of different tools and progress from circle, square and triangle analysis to the study of line, shape and form. They learn to draw basic silhouettes and proportions of the fashion figures, construct styles and designs. Alteration and modification of the available design and confirm it to the professional standards. Explore colour application and creation. Learning the techniques, materials and methods of using colour for various effects. Also students will learn to convert vector based images into a bitmap based one and then apply various effects and filters and thus develop and nurture one’s creative powers.
**Module II** – Introduction and use of scanning systems and it’s software’s. With the use of Bitmap based draping software learning different tools required for photo realistic draping of garments. Learning to apply and change the fabric texture. Print and colour in the scanned photograph. Students explore various approaches to creation and colour application. Creating colour ways, new designs and textures by using available effects like embossing, blurring, transparent, translucent and other such looks on the garment.

- **Advanced** – In the advanced module the students develop designs consistent with current fashion trends. Stress will be on professional techniques of garment construction utilising computers.

**Module III** – Pattern developing, Grading and Marking

This includes introduction of pattern making software, knowledge of hardware and pattern making programme. Students learn to use the computer as a tool for pattern making and other apparel industry applications. Making spec. sheets and drafting out patterns for people belonging to various age groups. Putting darts, adding seam allowances and making the layout. Using the tools like the French curve, L square etc. Adapting the standard measurements for the right kind of pattern. Plotting and printing the pattern. In Grading and Marking – Emphasizing apparel industry applications, students learn to use the computer to grade patterns and prepare, markers. Presently this software is provided by TUKACad Inc.

Besides this the students will also learn about the knits, about 3D presentation of the fabric on the croqui, learning about the combination of sketches and fabrics and also something about standard product data management. Presently these kind of software’s are provided by Kopperman – a design package which contains various softwares such as –

- **Tex-knit:** Students will be able to stimulate knits very easily and realistically. The most simple thing of Tex –Knit is the colouration and the repeat of the gauges.
- **3D –Tex Dress:** This software helps in 3D stimulation of the fabric so we are completely convinced about the realistic projections of the fabrics and find a very little difference in the printout and the actual garment.
- **Tex-Line:** It is very useful software specially when the students want to try various ideas in their collection. Using the pool it is very simple to find out sketches and the fabrics. Automatically all the variations of the fabric are stimulated.
- **Standard product data Management:** Also known as Tex Define –This software will help the students learn about efficient management of the data and better quality control.

**References**

4. Corklin, P.G. (1990): Pattern Grading for Women’s Clothes, the Technology of Sizing, BSP Professional
   Books, Oxford.
6. Computers in the World of Textiles – Papers Presented at the Annual World Conference, September 26-29,
   1984, Hongkong.
FASHION MARKETING AND MERCHANDISING

Code: 55125
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Objectives
To impart knowledge regarding the marketing environment and the prevalent merchandising practices. To guide the process of product development towards the market needs.

Contents
I. Dynamics of Fashion
Fashion terminology, factors influencing fashion, origins of fashion, the producers of fashions, profile of the fashion industry.

II. Marketing and Merchandising
Core Concepts, marketing mix and marketing environment, marketing and merchandising environment of India.

III. Market Segmentation, Targeting & Positioning (STP)
Concepts and methods of market segmentation, need for positioning, positioning through various means, formulation of positioning maps.

IV. Product in relation to Fashion
Classification of fashion, product life cycle, the process of product development, the making of a brand, branding strategies, brand management and brand image building.

V. Promotion and Distribution
Role of promotion, Methods of promotion: Advertising, Sales Promotion, Personal Selling: designing and management of different methods of promotion, and their employment in relation to cost effectiveness and product life cycle.
Different channels of distribution: Selection and management, designing and management of retail outlet.

VI. Pricing
Principles and methods of pricing: pricing in relation to product type, product life cycle, distribution outlet etc.

VII. Domestic vs Export Market
Principles of marketing and merchandising for the domestic and export market.

Project
To outline merchandising strategies for a product launch for a specified market segment, giving details of the marketing mix and STP approach.

References
FASHION COMMUNICATION

Code: 55126
Credits: T 2 P 0
Periods/week: 2
Marks: 50

Objectives

- To enable the students to critically appreciate and understand the intricacies of the fashion industry and to impart skills of communication comprising of visualization and illustration.

Contents

1. Fashion and the Communication Process
What is Fashion? The theories of fashion adoption, need for promotion of fashion, need for the communication process, communication through different media.

2. Written Communication
Fashion writing, creative writing, reporting features, editing and printing techniques, image management and advertising, public relations, press laws and media ethics.

3. Visual Communication
Visual merchandising and display, fashion photographs, Fashion shows and multimedia.

4. Communication in Practice
Scripting shows, conducting interviews, reporting events, fashion critics, planning PR campaigns, formulating case studies, designing catalogues and brochures, layouts for stands in Exhibition. Visualisation of décor and ambience, preparing short films and audio visuals, choreography of fashion event.

References

1. Farbey, A.D.: How to Produce Successful Advertising, Kogan Page India Pvt. Ltd.

**Journals**

2. Clothesline
3. Clotheon.com
GARMENT PRODUCTION TECHNOLOGY

Code: 55127
Credits: T 2 P 0
Periods/Week: 2
Marks: 50

Objectives

- To enable the students to get acquainted with the latest garment/clothing manufacturing technology related to the current practice in the clothing industry.
- To make the students aware of the influence of garment retailing on the clothing production process.
- To impart knowledge about the latest electronic equipments and machines used in the garment industry.
- To make students aware of the importance of maintaining quality standards during production.

Contents

1. Introduction to the background and structure of the garment/clothing industry.
2. The organisation of a garment factory
   1) Principles of Management.
   2) Various Departments like :
      a) Design Departments.
      b) Marketing Departments.
      c) Finance Departments.
      d) Purchasing Departments.
      e) Production Departments.
      f) Operations Departments.
3. Manufacturing Technology
   A) Cutting & Cutting Room
      i) Market Planning.
      ii) Efficiency, Method & Use of worker plan.
      iii) Methods of spreading of fabric and requirements of the spreading process.
B. Fusing Technology

C. Sewing Technology
   i) Sewing – properties, types.
   ii) Stitch – types.
   iii) Sewing Machines – Feed mechanisms, machine needles.
   iv) Sewing threads – type of fiber, construction and finish, thread size, thread package, thread costs, thread properties and seam performance.
   v) Sewing problems – stitch formations, damage along the seam line puckering.
   vi) Testing for sewability and tailorability

D. Sewing Machinery.

E. Use of components and trims.

F. Alternative methods of joining materials:
   i) Fusing.
   ii) Welding and adhesives.
   iii) Moulding.

G. Pressing Technology.

H. Production Technology.

I. Warehousing.

4. Engineering & Quality Control
   A) Production Engineering.
   B) Principles of Quality Control.

References

ENTREPRENEURSHIP MANAGEMENT

Code: 55128
Credits: T 2 P 0
Periods/Week: 2
Marks: 50

Objectives

- To promote entrepreneurship skills among the students.
- To analyse the environment related to small-scale industry and business.
- To understand the process and procedures of setting up small enterprises.
- To develop management skills for entrepreneurship development.

Contents

1. Entrepreneurship – definition, characteristics, employment promotion, efforts to reduce.
2. Business environment for the entrepreneur – Government of India’s policy towards promotion of entrepreneurship, reservations and sanctions for small scale sector.
3. Agencies for development of entrepreneurship – role of SSI, procedures and formalities for setting up SSI, Role of MIDC in industrial development, role of NSIC – supply of machinery and equipment on hire purchase, voluntary organisation, bank loan.
4. Personal Effectiveness – Factors affecting entrepreneur’s role, effective communication skills, achievement motivation, goal orientation, psychological barriers to self employment, creativity, assertiveness, quick response.
6. Establishing an enterprise – problems, information, source/schemes of assistance etc.
7. Management Techniques – planning, organising, appointing staffs, executing, controlling, and review;
   Financial management, working capital, bank funding, calculating risks, personal management, product management, purchase techniques, costing, marketing management, sales promotion, labour law application.
References