RESEARCH METHODS
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 an
- To apply the appropriate statistical technique for the measurement scale and design.

Unit I: Research- Meaning, purpose and approaches
- Exploration, Description, Explanation
- Scientific method and research
- Research Designs –Experimental and Observational
- Quantitative and Qualitative approaches
- Conceptualization and Measurement Variables, concepts and measurement
- Levels of measurement
- Units of analysis

Unit II: Sampling & Tools
- Role of sampling in research
- Types of sampling
- Research Tools and Techniques Validity and reliability
- Interviewing and observational methods

Unit III: The Research Process
- Defining the problem, research questions, objectives, hypotheses
- Review of related literature and originality in writing
- Planning the research
- Subjects context and ethics
- Methodology and tools
- Citation formats: in medical sciences, social sciences

Unit IV: Types of Research Tools (Qualitative and Quantitative)
- Quantitative research tools
- Qualitative research tools
- Focus Group Discussion
- Case studies
- Observations-Direct, Spot observations
- Body mapping
• Pile sorting
• Free listing
• Narrations
• In depth interview
• Drawing as dialogue

Unit V: Representation of Data
• Graphical and Diagrammatic Presentation of Data (Bar diagrams, Pie-diagram, Histogram, Frequency Polygon, Smoothed frequency curve and Ogives)
• Tabulation and Classification
• Frequency Distribution

Unit V I: Ethics and Politics of Research
• Identify, define, and analyze ethical issues in the context of human subject research.
• Reasons for conducting ethical review of research, theories and concepts related to ethical decision-making including consequentialism, deontology, respect, dignity, discourse ethics, communitarianism, liberalism and the four principles approach.
• Ethical importance of consent, privacy and confidentiality in research
• Issues of academic fraud and plagiarism, conflicts of interest, authorship and publication

Unit VII: Scientific writing as a means of communication
• Different forms of scientific writing
• Articles in journals
• Research notes and reports
• Review articles
• Monographs
• Dissertation
• Bibliography
• Book chapters and articles

Unit II: Outlines
• Concept of outline
• Importance of outlines
• Objectives of outline
• Types of outlines

Unit VIII: General principle of writing
• Preparing a text for submission and publication
• Drafting
• Outline
• Proof reading
• Brevity and precision
• Concepts of preface
• Notes (end and footnotes), glossary
• Prologue and epilogue
• Appendix
• Bibliography (annotated) and references cited
• Review and index

Unit IX: Dissertation/ Research reports/ Thesis
• Introduction
RECOMMENDED READINGS

- Bhattacharya DK (2004). Research Methodology. Published by Anurag Jain for excel books, New Delhi, India
- Delhi, Sultan Chand and Sons.
- Design, Prentice Hale Inc. N.J.
- God V. Caiter (1972) : Essentials of Educations Research Methodology and
- Good C.N. (1963) : Introduction to Educational research, New York, Applataan
- Keennetb King. (1978) : Final report Literacy Research in developing countries -
- Ltd., Ramnagar, Delhi.
- Patton Q.M. (1990) : Qualitative evaluation and Research methods, sage Pub.,
- Ratnapala N. (1993) : New Horizons in Research methodology, Sri Lanka,
  Sarvodaya Research Institute.
• Wandt Edwin (1968): A cross section of educational Research, David Mckay
  workshop on education research with special research on literacy. Geneva

  Washington: APA.
• Dunn, F.V. & Others. (Ed.) Disseminating research: Changing practice, N.Y. Sage
Part - 2

Core Subject (50%)

Unit 1.

FOOD SCIENCE AND FOOD SERVICE MANAGEMENT

1. Food science and nutrition.
2. Properties of food – physical and chemical properties
3. Quality evaluation of foods- objectives and subjective.
4. Effects of cooking and processing techniques on nutritional components and other physical parameters, food preservation and application.
5. Food pigments and additives.
6. Food standards, microbiological safety of food, HACCP, food packaging.
7. Perspectives of food service-menu planning, food cost analysis.
8. New product development – nano technology
9. Food service management of institutional level-hospital, educational institutions, social and special institutions
10. Research methods-fundamental issues, concept, need relevance, scope and ethics in research

UNIT -2

NUTRITION AND DIETETICS

1. Food groups – balanced diet, food pyramid, macro and micro nutrition.
2. Nutrients-role of nutrients in the body, nutrient deficiencies and requirements for Indians.
3. Public health nutrition
4. Nutrition through life span-physiological changes, growth and development from conception to adolescence, nutritional needs and dietary guidelines for adequate nutrition through life cycle, nutrition concerns.
5. Community nutrition, sports nutrition, nutrition in emergencies and disasters.
7. Nutritional intervention-national nutrition policies and programmes, food and nutrition security.
9. Diet counseling and management.
10. Research methods- research designs, principles and purpose of research
UNIT-3

TEXTILES

2. Manufacturing process of major natural and manmade fibres, properties and their end uses.
3. Different methods of fabric construction-woven, knitted and non woven fabrics, their properties and end uses.
4. Textiles finishes-classification, processing and purposes of finishes.
5. Dyeing and printing-classification, method of block printing, tie and dye, batik, roller printing, screen printing, discharge, heat transfer printing and digitized printing.
6. Traditional textiles of India-embroidered textiles, printed textiles, woven textiles, dyed textiles of various regions in India. Identification on the basis of fibre content, technique, motif, colour and designed.
9. Recent developments in textiles and apparels- nano textiles, tech
10. Elements and principles of design and its application to apparel. Illustrations and parts of garments.
11. Fashion-Terminologies, fashion cycle, fashion theories, fashion adoption, fashion forecasting and factors affecting fashion.
12. Pattern making-drafting, draping and flat pattern making techniques, pattern alteration and dart manipulation techniques.
13. Apparel manufacturing-terminology used, seams, techniques and machines used, process of fabric to apparel manufacture.
14. Apparel Quality testing-Quality standards and specification, Quality parameters and defects of fabrics and garments.
15. Care and maintenance of clothing-principles of washing, laundry agents, storage techniques case labels and symbols.
16. Selection of clothing for different age groups. Selection of fabrics for different and uses.
17. Research methods-hypothesis testing, types and scope

UNIT-4

RESOURCE MANAGEMENT AND CONSUMER ISSUES

1. Management-concept, approaches, management of time, energy, money, space, motivating factors, motivation theories, decision making.
2. Functions of management-planning, supervision, controlling, organizing, evaluation, family life cycle-stages, availability and use of resources.
3. Resources-classification, characteristics, factors affecting use, resource conservation, time management, work simplification techniques, classes of change, fatigue and its management.

4. Management of natural resources-land, forest, water, air, water harvesting, municipal solid waste management, concept of sustainable development, SDGs.

5. Money management-family income, types, supplementation, budgeting, household accounts, family savings and investment, tax implications.

6. Human resource management- functions, need, human resource development challenges, functions, manpower planning, training need assessment, training methodologies, training evaluation.

7. Consumer-definition, role, rights and responsibilities, consumer behavior, consumer problems, education and empowerment.

8. Consumer protection- consumer organization, cooperatives, alternative redressal, standardization, standard marks, quality control, buying aids, consumer legislation.

9. Entrepreneurship-concept, process, barriers, entrepreneurial motivation, challenges, enterprise setting, project planning and appraisal, enterprise management.

10. Research methods-sampling techniques, types of sampling, sampling procedures, probability and non probability sampling

UNIT 5

HOUSING AND INTERIOR DESIGN

1. Design fundamentals – elements of art, principles of design, principles of composition.

2. Colour – dimensions of colour, psychological effects of colour, colour schemes, factors affecting use of colour.

3. Space planning and design-housing need and important, principles of planning spaces, types of house plans, economy in construction, planning for different income groups.

4. Building regulations-norms and standards, zoning, housing for special groups and areas, housing finance.

5. Housing and environment- building materials- impact on environment, green rating systems, energy efficiency in buildings, energy auditing, indices of indoor comfort.

6. Energy as a resource- conventional and non-conventional sources, renewable /nonrenewable energy, energy management, national efforts on energy conservation.

7. Product design – design thinking process, diffusion and innovation, design communication, ergonomic considerations.

8. Ergonomics – significance, scope, anthropometry, man, machine, environment relationship, factors affecting physiological cost of work, body mechanics, functional design of work place, time and motion study, energy studies.

9. Furniture and furnishing – historical perspectives, architectural styles, contemporary trends, wall finishes, window and window treatments.

10. Research methods-selection and preparation of tools for data collection questionnaire, interview, observation, measuring scales, ranking and measurement, reliability and validity of tools.
UNIT -6

CHILD/HUMAN DEVELOPMENT

1. Principles of growth and development, care during pregnancy and pre-natal and neonatal development.
2. Theories of human development and behavior.
3. Early childhood care and education – activities to promote holistic development.
4. Influence of family, peers, school, community and culture on personality development.
5. Children and persons with special needs, care and support, special education, prevention of disabilities, rehabilitation.
7. Adolescence and youth: changes, challenges and programs to promote optimal development.
8. Adulthood, characteristics, changing roles and responsibilities in early an

UNIT -7

FAMILY STUDIES

1. Dynamics of marriage and family relationships.
2. Family welfare-approaches, programmes and challenges, role in national development.
3. Domestic violence, marital disharmony, conflict, resolution of conflict.
4. Parent education, positive parenting, community education.
5. Family disorganization, single parent families.
6. Family studies-family in crisis, family therapy, initiatives for child development.
8. Guidance and counseling- across life span and for care givers.
9. Health and well being across life span development.

UNIT -8

COMMUNICATION FOR DEVELOPMENT

1. Basics of communication- nature, characteristics, functions, process, models, elements, principles, barriers, perception, persuasion and empathy, types of communication, levels (settings) of communication transactions, process of listening.
2. Communication systems and communication theories- human interaction theories, mass communication theories, message design theories, communication systems, culture and communication.
3. Concept of development- theories, models, measurement and indicators of development.
4. Concept of development- communication models and approaches, diffusion and innovation, mass media, social marketing.
5. Role of communication in development- need and importance, development journalism, writing for development-print, radio, television and internet.
6. Concerns of development communication- gender, health, environment, sustainability, human rights, population, literacy, rural and tribal development.
7. Advocacy and behavior change communication- concept, theories, models, approaches, application and challenges.
8. Traditional, modern and new media for development – folk forms of songs, art, dance, theatre, puppetry, advertisement, cinema, ICTs for development-community radio, participatory video, social media and mobile phones.
9. Organization/agencies/institutes working for development communication international/national/state and local.
10. Research methods-analysis of data through parametric and non parametric tests.

UNIT -9

EXTENSION MANAGEMENT AND COMMUNITY DEVELOPMENT

1. Historical perspectives of extension—genesis of extension education and extension systems in India and other countries, objectives of extension education and extension service, philosophy and principles of extension programme development.
2. Programme management- need assessment, situation analysis, planning, organization, implementation, monitoring and evaluation.
3. Extension methods and materials- interpersonal, small and large group methods, audiovisual aids need, importance, planning, classification, preparation and field testing, use and evaluation of audio-visual materials.
4. Curriculum development and planning for extension education and development activities, Bloom’s taxonomy of educational objectives and learning.
5. Non-Formal, adult and lifelong education-historical perspectives, concept, theories, approaches, scope, methods and materials used, challenges of implementation and evaluation, issues to be addressed.
6. Training, skill development and capacity building for human resource development methods of training, entrepreneurship development.
7. Community development- perspectives, approaches, community organization, leadership, support structures for community development, Panchyati raj institutions, NGOs and community based organisations.
8. People’s participation and stakeholders’ perspectives, Participatory Learning and Action-methods and techniques.
9. Development programmes in India for urban, rural and tribal population groups programmes for nutrition, health, education, wage and self employment, women’s development, skill development, sanitation and infrastructure.
10. Research methods-scientific report writing, presentation of data, interpretation and discussion.