

**GOVERNMENT HOME SCIENCE COLLEGE**  
**CHANDIGARH**  
**Ph.D. COURSE WORK IN HOME SCIENCE**  
**SCHEME OF STUDIES**

<b>PAPER</b>	<b>SUBJECT</b>	<b>CREDIT HOURS</b>	<b>MARKS</b>
I	Research Methodology and statistics	4	Satisfactory/Unsatisfactory
II	Journal Club	1	Satisfactory/Unsatisfactory
III	Clothing and Textiles Or Foods and Nutrition Or Human Development and Family Relations	3	Satisfactory/Unsatisfactory

**PAPER I**

**Research Methodology and statistics**

**(COMMON TO ALL SUBJECTS)**

**Credit hours:4**

**Marks: Satisfactory/Unsatisfactory**

**Objectives:**

- To acquaint students with research and statistical methods.
- To impart knowledge of Computer applications for data analysis.

**UNIT I**

- 1. Research Methodology:** Meaning and Objectives of research; Types of research [Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical, Field setting vs. laboratory, clinical vs. diagnostic, Exploratory vs. Formalized]; Research Approaches [Qualitative approach and Quantitative approach]
- 2. Defining the Research problem:** Meaning of research problem; Selecting the research problem; Techniques involved in defining problem.
- 3. Research Designs:** Meaning, need, features of a good design, concepts relating to research design, Different research designs – Exploratory research studies, descriptive

and diagnostic research studies, Longitudinal, cross-sectional and sequential studies; Hypothesis-testing; Basic principles of Experimental designs; Important experimental designs; Evaluation and Interventional designs.

## **UNIT II**

- 4. Sampling Design:** Steps in sampling design; Criteria of selecting a sampling procedure; Characteristics of a good sampling design; Types of sampling designs [Non-probability sampling and Probability sampling]; Complex Random Sampling Designs [Systematic sampling, Stratified sampling, Cluster sampling, Area sampling, Multi-stage sampling, Sequential sampling].
- 5. Measurement and Scaling Techniques:** Measurement in research, Measuring scales, Sources of error in measurement, Test of sound measurement- validity, reliability, practicality; meaning of scaling, Scale classification bases, Important scaling techniques - rating scales, Scale construction techniques-arbitrary scales, differential scales, Likert-type scales, cumulative scales, factor scales, multidimensional scaling.

## **UNIT III**

- 6. Methods of Data Collection:** Collection of primary data in surveys and descriptive research - Observation, Interview, Questionnaire, Schedules, Case study, and Collection of secondary data and characteristics to be noticed before using secondary data.
- 7. Ethical Issues in Research:** Benefits of Research, Responsibility, Rights of the Research Participant, Physical and Psychological Risks, Deception, Reducing Risk and/or Minimizing Harm, Informed Consent, Privacy, Summary of Results; Ethical Issues regarding Copyright.

## **UNIT IV**

- 8. Statistical Methods I: Probability and Inference** - Derivations of quantitative statistics, Descriptive statistics, probability, and normal distribution. One-/two-sample hypothesis tests, confidence intervals. Chi square tests. One-way analysis of variance.
- 9. Statistical Methods II: Regression and the General Linear Model** - Analysis of variance designs (two-/three-way), repeated measures, correlation, simple/multiple regression methods, non-parametric procedures, multivariate analyses.
- 10. Computer Application in Analysis of Data**
- 11. Scientific writing:** Significance and steps in scientific writing, Layout of the research report writing, Types of Reports, Mechanics of writing a research report, Precautions for writing research reports, Writing the research articles and project proposal

## **PAPER II**

### **Journal Club**

**(COMMON TO ALL SUBJECTS)**

**Credit hours:4**

**Marks: Satisfactory/Unsatisfactory**

#### **Objectives:**

- To stimulate continuing intellectual curiosity in students to discover new ideas, to re-look at old ideas, and to develop insightful connections among ideas.
- To encourage them to exchange ideas focused on a source.
- To provide a unique and intellectual experience to the students.

Each research scholar would present a seminar on a topic relevant to her Subject/Research area based on national and international indexed journals.

## **PAPER III**

### **Clothing and Textiles**

**Credit hours:4**

**Marks: Satisfactory/Unsatisfactory**

#### **Objectives:**

- To orient the students to the latest advances in the field of Clothing and Textiles.
- To provide a link between theory and applied initiatives in the field of Design Research, Quality assurance and CAD.

#### **UNIT-I**

1. Recent developments in Textiles and Apparel.
2. Technological upgradation of Textile Industry.
3. Technological upgradation of Apparel Industry.

#### **UNIT-II**

4. Impact of globalization on Apparel and Textile sector of India.
5. Changing dimensions of Retail sector in Apparel Industry.
6. Quality Assurance in Clothing and Textiles
7. Instrumentation in Quality Control

### **UNIT-III**

8. Fashion Forecast
9. Concept of Design process
10. Influence of material and non material aspects in Design Process
11. Advance pattern development through Draping

### **UNIT-IV**

12. Concept of CAD in Designing
  - a) Textile Designing
  - b) Garment Designing
13. Recent advancements in CAD/CAM

## **PAPER III**

### **Perspectives in Human Development**

**Credit hours:4**

**Marks: Satisfactory/Unsatisfactory**

#### **Objectives:**

- To orient the students to the latest advances in the field of Human Development with a focus on cultural perspectives.
- To provide a link between theory and applied initiatives.

### **UNIT-I**

**1. General orientation to standardized tools of psychological testing for various age groups:**

- a) Intelligence
- b) Personality
- c) Adjustment
- d) Mental Health

### **UNIT-II**

**2. General orientation to theories of**

- a) Piaget
- b) Erikson
- c) Freud
- d) Bandura

### **UNIT-III**

3. Identification, treatment and education of children with special needs.

### **UNIT-IV**

4. Counselling in applied settings

- a) Emotional and behavioural problems of children
- b) Marital problems
- c) Problems related to adults
- d) Problems related to elderly

## **PAPER III**

### **Foods and Nutrition**

**Credit hours:4**

**Marks: Satisfactory/Unsatisfactory**

#### **Objectives:**

- The primary aim of the programme is to train the students in the method of scientific inquire and independent research. This is accomplished through advanced coursework and active participation with the faculty in their research programmes.
- Doctor of Philosophy students are expected to have a broad knowledge of all fields Foods and Nutrition and have a deep understanding of at least one of its areas.
- The most important component of the Doctor of Philosophy programme is learning to perform independent and significant research in one's area of specialisation.

### **Unit-I**

#### **Special concepts in Nutrition**

**1** Nutrigenomics, metabolomics Nutrition for space travelers, nutraceuticals, functional foods, genetically modified foods, fat substitutes, emerging food processing technologies, nanotechnology, microencapsulation, biopolymers for packing, active packaging, edible gums and coating, polar electric field, membrane filtration

**2** Biotechnological intervention in nutrition transition and food safety, non-nutritional food and nutritional food and ant oxidative components with potential health benefits of nutrients in health and disease, probiotic and prebiotic foods for health benefits.

### **Unit-II**

#### **Concept of Food quality and food security**

**1** National and International Food Laws, Food standards and governing bodies, FSSAI, HACCP, GMP

**2** Product evaluation: sampling for product evaluation

**3** Food security problems and management

### **Unit-III**

#### **Nutrition plan of action**

**1** Objectives and operation of National Nutrition Programme, planning, monitoring, evaluation, National Nutrition Policy

**2** Recent/ Present five years plan on Nutrition

### **Unit-IV**

#### **Public Health Problems**

**1** Etiology and Management of Public Health Problems Viz. Protein Energy Malnutrition/ Vitamin A Deficiency/ Iodine Deficiency Disorder/ Iron Deficiency Anaemia/ Zinc Deficiency/ Vitamin D Deficiency

**2** Water sanitation and Hygiene (WASH) practices in Community