

## Ph.D in TEXTILES AND CLOTHING

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| <b>Course Code &amp;<br/>Title</b> | <b>Research Methodology</b>   |
| <b>Cognitive Level</b>             | <b>K1: Recall<br/>K3: Apply<br/>K4 Analyze<br/>K5: Evaluate<br/>K6: Create</b>  |
| <b>Learning<br/>Objectives</b>     | The Course aims to <ul style="list-style-type: none"><li>➤ Learn some basic concepts of research</li><li>➤ Understand about formation of research hypothesis.</li><li>➤ Methods of Data Collection</li><li>➤ Gain knowledge on report preparation</li><li>➤ Understand about role of statistics in research</li></ul> |

### Unit I Concepts of Research

Fundamental Concepts of Research -Meaning of Research – Types of Research, Research Process, Research Design. Survey Research and Experimental Research – Types. Research Problem - Formulating Research Problem, Defining the research problem, Selection of Research Problem and Technique involved in defining a problem. Developing a research proposal- Presentation of a problem, objectives, method, work plan, Personnel, facilities and budget.

### Unit II Research objectives

Research objectives – Development of good research Objectives. Review of literature- Understanding and completing Literature review, Preparing a Literature review, Identifying, Choosing and Locating Relevant Literature, Reading and Taking Notes, Taking Your Review from Descriptive to Critical Level.

Hypothesis - functions and roles- Formulation of Hypothesis – types of research hypothesis.

Sampling Design – Concept of Sampling - Purpose of Sampling-Stages of sampling process - Different types of Sampling– Probability and Non-Probability Sampling.

### **Unit III Data collection and presentation**

Data collection and presentation - Definition -Primary and Secondary data, Sources of Primary and Secondary data. Data Collection Methods- Quantitative data collection methods-Interviews and Types of Interviews (Face to face Interviews, Telephone Interviews, Computer Assisted Personal Interviewing) Questionnaires (Paper-pencil questionnaires, web-based questionnaires) Scientific Experiments and Laboratory test methods - Qualitative data collection Methods - In depth Interview, Focus Group, Observation method, Document review, Ethnography. Data Processing– Steps in Data processing for Quantitative Studies and Qualitative studies -Data Presentation-Textual, Tabular (Components of table, features of a good table, kind of tables, classification of data and tabular presentation) and Graphical.

### **Unit IV Research Report**

Research Report – Significance of Report Writing, Steps in Writing Report, Layout of Report - Format of research report -main body of the report, references and appendices, style of writing, typing the report, pagination, tables and figures, bibliography, footnotes, margins, quotations, Plagiarism checking and Report.

Research Publication – Introduction, General style, Title page, Abstract, Research paper, Literature citations - Significance of Patent Right and Copy Right.

Research Ethics –Ethical issues in clothing industry, Code of ethics in fashion industry.

### **Unit V Statistics**

Meaning and scope of statistics, role of statistics in research, measures of central tendency and dispersion. Co- efficient of Correlation and its Interpretation, Rank Correlation, Regression equation, Application of Chi – Square test, ANOVA test. Software application for statistical analysis.

## References

1. Research Methodology: A Step By Step Guide For Beginners, 2/E, Ranjit Kumar, Pearson Education India, 2018
2. Research Methodology: Methods and Techniques, C R Kothari, New Age International (P) Ltd, Delhi, 2011.
3. Introduction to Research in Education, Donald Ary, Lucy Jacobs, Asghar Razavieh, Christine Sorensen, Cengage Learning, 2009
4. An Introduction to Statistical Methods, S P Gupta, Vikas publishing House, Delhi,2009. Highly Recommended, not Compulsory
5. Research Methodology: An Introduction, Wayne Goddard, Stuart Melville, Jut and Company Ltd, 2004
6. Statistical Method- An Introductory text. J.Medo, New Age publishers, Delhi, 2005

## COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

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|-----------|-------------|---|
| <b>K1</b> | <b>CO1</b>  | <b>The fundamental concepts of research</b>                                   |
| <b>K4</b> | <b>CO 2</b> | <b>The process of Literature review and find the research gap</b>             |
| <b>K5</b> | <b>CO 3</b> | <b>Selection of proper method of data collection and presentation of data</b> |
| <b>K6</b> | <b>CO 4</b> | <b>Development of a good research report</b>                                  |
| <b>K3</b> | <b>C0 5</b> | <b>Application of statistics in research</b>                                  |