

St. Joseph's College for Women(A), Visakhapatnam NAAC Reaccredited-ISO 9001-2015,14001:2015 Certified



3.4.1 Syllabus Copy of Research Methodology Course Work

St. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAMVI SEMESTERHOME SCIENCETime:6HRS/WEEKFn 1.1RESEARCH METHODOLOGY AND STATISTICSMARKS :100SYLLABUS

OBJECTIVES: To enable the students to –

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

CONTENTS:

Unit :

- 1. Science, scientific methods, scientific approach.
- 2. Role of statistics and research in Home Science. 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 multistage sampling, cluster sampling. Non Probability sampling: purposive, quota and volunteer sampling/snowball sampling
- Basic principles and Purpose of research design Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex – post facto' Longitudinal and cross sectional
 - Qualitative Research Methods: Theory and design in qualitative research
 Definition and types of qualitative research -Methods and techniques of data collection Observation, questionnaire, interview, scaling methods, case study, home visits, reliability and validity of measuring instruments
- Classification & tabulation of data Measures of central tendency Measures of variation – Testing of Hypothesis – Parametric & Non-parametric tests, chi-square test, correlation ANOVA.

References:		
	1.	Bandarkar, P.L. and Wilkinson T.S. (2000):
		Methodology and Techniques of socialResearch, Himalaya
		Publishing House, Mumbai.
	2.	Bhatnagar, G.L. (1990): Research Methods and
		Measurements in Behavioural andSocial Sciences, Agri. Cole
		Publishing academy, New Delhi.
	3.	Dooley, D. (1995): Strategies for Interpreting
		Qualitative Data; Sage Publications, California.
	4.	Gay, L.R. (1981): Educational Research, proper Solutions:
		Avoiding Errors inQuantitative Research. II Edn. Sage
		Publications: Beverly Hills, California.
	5.	Long; J.S. (Ed) (1988): Common Problems Proper
		Solutions: Avoiding Errors inQuantitative Research, Beverly
		Hills, Sage Publications, California.
	6.	Mukherjee, R. (1989): The Quality of Life: Valuation
		in Social Research, SagePublications, New Delhi.
	7.	Stranss, A. and Corbin, J. (1990); Basis of Qualitative
		Research: Grounded TheoryProcedures and Techniques, Sage
		Publications, California.

St. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAMII SEMESTERM.Sc. PsychologyTime: 5HRS/WEEKM.Sc. Psy 203Research MethodologyMarks:100

Learning Objectives:

- Students should understand a general definition of research design.
- Students should know why psychological research is undertaken, and the audiences that profit from research studies.
- Students should be able to identify the overall process of designing a research study from its inception to its report.
- Students should be familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research.

Course Outcomes:

CO1- Identify and discuss the role and importance of research in social science.

CO2- Demonstrate their understanding and ability to implement basic and applied research designs.

CO3- Establish knowledge of the range of analytical, statistical techniques that are used in psychological research.

CO4- Recognize of psychological research.

CO5- Awareness of ethical issues involved in psychological testing

Unit-I Basic concepts of experimental method 1.Variable

Auglitative and quant

Qualitative and quantitative variablesIndependent variables Dependent variables Extraneous variables

1. Experimental control

Independent variable control Extraneous variable control **3.Sampling** Probability sampling methods Non probability sampling methods **4.Problem and hypothesis**

Unit-II Qualitative methods

A. Observation

Purpose of observationTypes of observation

B. Interview

Types of interview

Major functions of interview

Factors affecting the uses of interviews Advantages and disadvantages of interviewImportant sources of errors in interview

C. Content analysis

Purposes of content analysis Methods of content analysis Evaluation of content analysis

2. Quantitative methods

A. Questionnaires

Types of questionnaires

Functions and applicability of questionnaires

B. Rating scales

Types of rating scale (Numerical, graphical, standard, Q sort, Semantic differential, sociometry) Errors in ratings Methods of improving effectiveness of rating scales

3. Types of research

A. Experimental research

Laboratory experiments Field experiments

B. Non-experimental research Ex-post facto research Field study

Survey research Case studies Ethnographic studies

Unit-III Statistics

- A. Types of scales (Ordinal, Nominal, Interval and ratio scales)
- B. Graphic representation of data
- C. Measures of central tendency and variability
- D. Characteristics, deviations and applications of normal probability curve
- E. Standard error for measures of central tendency and variability
- F. Correlations -

Pearson Product moment correlation Rank order correlation Biserial correlation Point biserial correlation Tetra choric correlation Phi coefficient Partial correlation Multiple correlation G. Regression analysis

H. Factor analysis

- I. Multivariate statistics
- J. Non parametric statistics
 - Chi-square Sign test Median test Sign rank test u test Kruskal-Wallis H test Friedman test

Unit-IV Designs

Between subject designs

Two randomized group designs More than two randomized group designsFactorial design Matched group designs Statistical analysis – t test, F test.

Within subject designs

Two conditions

Several conditions Evaluation Statistical analysis – t test, F test

Single subject designs

Paradigm of single subject experimental research with draw designs Reversal design Multiple base line designs Changing criterion designsData analysis Evaluation

Quasi-experimental designs

Unit-V Writing a research report

Structure and format Style of writing Evaluating a research report

Recommended reading:

- 1. D.Amto, M.R.(1979). *Experimental Psychology, MethodologyPsychophysics and Learning.* New Delhi : Tata Mc-Graw Hill.
- 2. Garrett, H.E. (1966) Statistics in Psychology and Education.
- 3. Bombay : Vakils Feefer & Simon Pvt. Ltd.
- 4. Guilford J.P. (1965). <u>Fundamental Statistics in Psychology andEducation</u> (4th Edn.). New Delhi: Subject Publications.
- 5. Herson, M. & Barlow, D.H. (1980) <u>Single Case ExperimentalDesigns</u> NewDelhi : Prentice – Hall of India Limited.
- 6. Kerlinger, F.N. (1978) *Foundations of Behavioural Research*, NewDelhi : Subject Publications.
- 7. Kurtz, A.K. & Mayo, S.T. (1980). <u>Statistical methods in Educationand</u> <u>Psychology</u>.

New Delhi : Narosa Publishing House.

 Mc.Guigan, F.J. (1990) <u>Experimental Psychology</u> New Delhi:Prentice Hall of India Limited.