

University of Mysore

DOS in Food Science and Nutrition, Manasagangothri, Mysore

Syllabus of Advanced Research Methodology in Human Development

Unit 1	<p>a. 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] Significance of research; Basic concepts about the research and scientific method; Research process</p> <p>b. Defining the Research problem: Meaning of research problem; Selecting the research problem; Techniques involved in Defining problem:</p> <p>c. 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 research studies; Basic principles of Experimental designs; Important experimental designs; Evaluation and Interventional designs</p>
Unit 2	<p>a. Sampling Design: Steps in sample design; criteria of selecting a sampling procedure; Characteristics of a good sampling design; Types of sample designs [Non-probability sampling and Probability sampling]; Complex Random Sampling Designs [Systematic sampling, Stratified sampling, Cluster sampling, Area sampling, Multi-stage sampling, Sequential sampling]</p> <p>b. 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</p>
Unit 3	<p>a. Methods of Data Collection: Collection of primary data in surveys and descriptive researchs - Observation, Interview, Questionnaire, schedules, Case study, and Collection of secondary data and characteristics to be noticed before using secondary data</p> <p>b. Ethical Issues in Research: Benefits of the 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.</p>

<p>Unit 4</p>	<p>Discipline Centric Research methods and Techniques</p> <p>a. Methods in Studying Growth and Somatic status – Anthropometry, body composition, Physical/Clinical examination, Dental maturation, Age at menarche/spermarche, Use of growth reference,</p> <p>b. Methods in Studying Development and Behaviour - Descriptive studies; Ethnographic studies; Epidemiological studies; Program Evaluation studies: Genetic studies – Twin study, Pedigree, Genome analysis; Clinical studies – Developmental and Neuro-Cognitive Assessment, Interventional studies and Therapy; Laboratory studies – Behavioural, Electrophysiological and Brain imaging research.</p> <p>c. Use of Computer in Research</p>
<p>Unit 5</p>	<p>a. Statistical Methods I: Probability and Inference - Advanced theory, derivations of quantitative statistics. Descriptive statistics, probability, normal distribution. One-/two-sample hypothesis tests, confidence intervals. Chi square tests. One-way analysis of variance, follow up tests.</p> <p>b. 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.</p> <p>c. Computer Application in Analysis of Data</p>
<p>Unit 6</p>	<p>a. Interpretation: Meaning, Techniques, and precacutions in interpretation</p> <p>b. Scientific writing: Significance and steps in scientific writing, Review of literature, Authenticity of reviews, Layout of the research report writing, Types of Reports, Mechanics of writng a research report, Precacustions for writing research reports: Writing the research articles and project proposal</p>