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### MF5072 RESEARCH METHODOLOGY

#### **DETAILED SYLLABUS**

#### **OBJECTIVES**

To impart scientific, statistical and analytical knowledge for carrying out research work effectively.

### UNIT I INTRODUCTION TO RESEARCH

The hallmarks of scientific research – Building blocks of science in research – Concept of Applied and Basic research – Quantitative and Qualitative Research Techniques – Need for theoretical frame work – Hypothesis development – Hypothesis testing with quantitative data. Research design – Purpose of the study: Exploratory, Descriptive, Hypothesis Testing.

### **UNIT II EXPERIMENTAL DESIGN**

Laboratory and the Field Experiment – Internal and External Validity – Factors affecting Internal validity. Measurement of variables – Scales and measurements of variables. Developing scales – Rating scale and attitudinal scales – Validity testing of scales – Reliability concept in scales being developed – Stability Measures.

### **UNIT III DATA COLLECTION METHODS**

Interviewing, Questionnaires, etc. Secondary sources of data collection. Guidelines for Questionnaire Design – Electronic Questionnaire Design and Surveys. Special Data Sources: Focus Groups, Static and Dynamic panels. Review of Advantages and Disadvantages of various Data-Collection Methods and their utility. Sampling Techniques – Probabilistic and non-probabilistic samples. Issues of Precision and Confidence in determining Sample Size. Hypothesis testing, Determination of Optimal sample size.

#### **UNIT IV MULTIVARIATE STATISTICAL TECHNIQUES**

Data Analysis – Factor Analysis – Culster Analysis -Discriminant Analysis – Multiple Regression and Correlation – Canonical Correlation – Application of Statistical(SPSS) Software Package in Research.

### **UNIT V RESEARCH REPORT**

Purpose of the written report – Concept of audience – Basics of written reports. Integral parts of a report – Title of a report, Table of contents, Abstract, Synopsis, Introduction, Body of a report – Experimental, Results and Discussion – Recommendations and Implementation section – Conclusions and Scope for future work.

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- 2. Donald H.McBurney, Research Methods, Thomson Asia Pvt. Ltd. Singapore, 2002.
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