SEMESTER II

RESEARCH METHODOLOGY

Programme: M.Com (Applied Finance) **Max Marks: 100**
Course Code: P20/COM/DSC/205 **Max Hours 90**
Course Type: DSC **Hours per week: 6 hrs**
No. Of Credits:5

Course Objective:

The objective of the course is to develop research orientation and analytical skills among the students and to use SPSS software to generate computer solutions for Quantitative Methods

Course Outcomes:

CO1: To discuss the basics of research methods
CO2: To apply the basics of sampling techniques.
CO3: To outline the overall process of inception of a research design
CO4: To complete the overall process of reporting a research design.
CO5: To organise information and prepare the statistical hypothesis
CO6: To carry out statistical analysis that can test hypotheses**.**
CO7: To discuss what is implied by null and alternative hypotheses
CO8: To examine why non directional rather than directional hypotheses are predominantly used in research studies**.**
CO9: To identify the assumption of expected frequency size for the Chi Square test.
CO10: To identify the restriction of expected frequency size for the Chi Square test.

MODULE I - RESEARCH METHODS AND SAMPLING: (18 Hrs)

Meaning of research- purpose- need and importance- types of research- research approaches - pure research vs. applied research- Qualitative research vs. Quantitative research- Exploratory research- Descriptive research – Criteria of good research – Ethical issues in Business Research - problems encountered by researcher -Research methods and techniques - Research problem - Formulation of research problem - Common errors - Research design- Meaning - Need – Functions - Goals of a research design - Different research designs.

Concept of Population, Random sample, Parameter, Statistic, Sampling distribution and Standard error -Sampling design – Census and sample survey- Advantages and disadvantages of sample and census methods - Types of sampling – Techniques - Selection of Random sample- Sampling and non sampling errors- Methods of Reducing sampling errors.

MODULE II - COLLECTION, PROCESSING & ANALYSIS OF DATA, REPORT WRITING (18 Hrs)

Methods of Data collection- Primary and secondary data - Choice between primary and secondary data – Measurement and Scaling concepts – Types of scales – Criteria for good measurement – Attitude rating scales- Questionnaire design- Questionnaires – Schedules - difference between the two - Some other methods of data collection – Collection of Secondary data - Case study method.

Processing of Data – problems in processing - Editing- Coding - Interpretation – Precautions in Interpretation – Conclusions and Generalizations - – Bias - Drawing wrong inferences.
Report writing - significance of report writing- Different steps in report writing- Lay out of a Research report - Types of reports- Precautions for writing a Research report- Bibliography- oral presentation.

MODULE III - DATA ANALYSIS USING SPSS: (18 Hrs)

Basics of SPSS – data entry – formation of frequency tables – editing and saving – using built in functions in SPSS – importing data from EXCEL – copy and exporting to MS Word document - Diagrammatic Representation of data: Bar Pie, Stem and Leaf Charts, Box plots - Graphical Representation of Data: Histogram, Frequency polygon, Ogives – Computation of measures of Central Tendency, Dispersion and coefficients of Skewness and Kurtosis.

MODULE IV - SAMPLING OF VARIABLES (18 Hrs)

Concepts of Statistical Hypothesis, Null Hypothesis, Alternative Hypothesis, Critical region, Type I and Type II errors, Level of Significance, One tail and Two tail tests, Procedure of Testing of Hypothesis

Large Samples Tests: Use of Central Limit Theorem for Confidence intervals Testing for the significance of Proportion, Difference between Proportions of two samples and Testing for the significance of Mean, Difference between means of two samples, Significance of Standard Deviation.

Small Sample Tests: Tests of significance based on 't' Distribution, Confidence intervals and Testing the significance of the mean, Testing the significance of the difference between two independent means, Testing the significance of the difference between two dependent means (Including practical problems).Testing the significance of the correlation coefficient.

MODULE V - ANALYSIS OF VARIANCE AND CHI SQUARE TEST (18 Hrs)

Chi Square Test: Conditions for applying Chi-square test, Uses and limitations of Chi- square test, Chi-square test for testing the independence of Attributes, Yates's correction, Chi square test for goodness of fit (including problems)

F Test : Applications of F test, Analysis of Variance (ANOVA), Assumptions, Procedure of one way and two-way analysis of variance (including problems).

Suggested readings:

1. Shashi K Gupta, Praneet Rangi: Research Methodology, Kalyani Publishers
2. C.R Kothari, Research Methodology , Vishwa Prakashan
3. Richard I Levin, Statistics for Management , Pearson Education
4. Dipak Kumar. Bhattacharya, Research Methodology , Excel books
5. Andy Field, Discovering Statistics using SPSS for Windows, Sage Publications
6. Julie Pallant, SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows (Version 15).
7. William G. Zikmund-Business Research Methods ,Thomson Asia Pte Ltd.
8. J. K. Sharma : Business statistics, Pearson Education

PRACTICALS USING SPSS

1. Construction of Frequency Tables for Data
2. Diagrammatic and Graphical representation
3. Box plots ,Stem and Leaf charts
4. Descriptive statistics
5. Correlation and regression
6. t-test for single mean
7. t -test for dependent and Independent samples.
8. Chi-square test for independent of attributes
9. One-way ANOVA
10. Two – way ANOVA

RESEARCH METHODOLOGY

MODEL QUESTION PAPER

Course Code: P20/COM/DSC/205 **Max.Marks:60**
Time:2 ½ hrs

SECTION - A

I. Answer any FIVE **5 x 2= 10 M**

1. Qualitative Research
2. Types of scales with examples
3. Process of importing Data from Excel
4. Explain Central Limit Theorem
5. Yate's Correction.
6. Research design
7. Type I and Type II errors
8. Histogram

SECTION – B

II. Answer any FIVE **5 x 10 = 50 M**

9. Explain the meaning, role & importance of research design in research.

OR

10. Explain types of sampling in detail.

11. Explain methods of data collection in detail. Explain the factors that determine the choice of a method of data collection.

OR

12. What is Report Writing? What precautions need to be taken to prepare a Research Report.

13. What is SPSS? Explain the interpretation of any 6 in built functions of SPSS useful for research.

OR

14. Explain the computation of measures of Central Tendency using SPSS.

15. The research unit in an organization wishes to determine whether scores on the scholastic aptitude test are different for male and female applicants. Random samples of applicant's file are taken and summarized below.

	APPLICANTS	
$\bar{x}$	502.1	510.5
s	86.2	90.4
n	399	204

Using the above sample data, test the null hypothesis that the average score is same for the population male and female applicants. Use 5% significance level and assume that the scores are normally distributed in each case.

OR

16. Two-sales man A &B are working in a certain district. From a sample survey conducted by the Head office, the following results were obtained. State whether there is any significant difference by the average sales between two sales men.

	A	B
Number of sales (in Units)	20	18
Average of sales (in ₹)	170	205
Standard Deviation in ₹	20	25

17. From the table given below, whether the color of sons' eyes is associated with that of fathers' eyes.

Eyes color in sons

		Not Light	Light
Eye color in Fathers	Not Light	230	148
	Light	151	471

OR

18. The Standard Deviations calculated from two random samples of sizes 9 & 13 are 2.1 and 1.8 respectively. May the samples be regarded as drawn from normal populations with the same standard deviation? The value of F from the table with degrees of freedom 8 & 12 is 2.85.