Course Code	**: COC122**
Course Title	**: Business Statistics & Research Methodology**
Number of Credits	: 4
Effective from AY	: 2020-21
Need of the Course :	To familiarize students with the meaning and importance of carrying out successful research, its wide applications in various fields of study and the importance of making calculated decisions in the present globalised business world.
Description of the Course :	This course is designed to motivate the students to identify research gap, identification and collection of relevant data (uni-Variate, bi-Variate, and multi-Variate data sets) and finally analysis of data using various statistical techniques starting from reliability/normality testing, organising, describing, relationship and prediction, and testing the significance. Students are also familiarized with intellectual honesty and ethics while preparing a research report.
Objectives of the Course :	1. To understand the significance of research. 2. To develop research questions, objective and related hypothesis. 3. To learn how to process the data and interpret results.

Course Content		
Unit 1	**: Introduction to Research**	**8 Hours**
Need, Purpose and Importance of research – Application of research – Types and Methods of research – Steps in research. Identification of Research Gap – Content Analysis of the existing literature – Develop Research Questions, related Objectives and Hypothesis – Research Design. Importance of Data (sample Vs population / sampling methods / primary Vs secondary) identification, collection and analysis – Preparation of Questionnaire. Measurement and Scaling Techniques – Validity and Reliability – Collection of data (pilot studies and Pre-tests).		
Unit 2	**: Data Analysis - I**	**16 Hours**
Uni / Bi / Multi Variate Data – Organizing sample data (Tabulation and Graphs). [*self-study of reading relevant research papers*] [*Includes practical problems on testing Cross Tabulation*]. Describe the nature of sampling distribution – How to assess Performance, Reliability, Symmetry and Normality. [*self-study of reading relevant research papers*] [*Includes practical problems*]. Analysing relationships and prediction using Regression and Time Series Analysis (Predictive Analytics) – Assessing relationships, reliability, cause and effect, lag and lead, and level of significance. [*self-study of reading relevant research papers*] [*Includes practical problems*]. Application of probability, Mathematical Expectation and probability distributions (Binomial / Poisson / Normal). [*Includes practical problems*].		
Unit 3	**: Data Analysis - II**	**18 Hours**
Importance of Theory of Estimation and Testing of Hypothesis (Large and Small Sample Testing, Non-Parametric Testing). [*includes practical problems*] Basics of Multi-variate data analysis using Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM). [*Self-study of reading relevant research papers*].		
Unit 4	**: Report writing**	**6 Hours**
What constitutes a research report – Types of reports – Intellectual honesty and ethics (Plagiarism,		

Cheating, Fabrication and Falsification, Multiple Submission, Misuse of Academic Materials, Complicity in Academic Dishonesty).	
Pedagogy	The following methods and forms of study are used in the course Lectures, Case Studies and Practical's. Self-study on carrying out literature review and preparing content analysis. Self-study of solving home assignments using MS Excel and other statistical software's, working with psychometric and econometric data and also doing research based on the web.
Reference/Readings	Chawla, Deepak and Sondhi, Neena. Research Methodology: Concepts and Cases. 2/e, 2016, Vikas Publishing House Private Ltd. Cooper, Donald R and Schindler, Pamela S, Business Research Methods, 9/e, 2006, Tata McGraw Hill. Krishnaswami, O. R, Ranganathan. M and Harikumar P. N. Research Methodology. 1/e, 2016. Himalaya Publishing house. Gupta, S.C. Fundamentals of Statistics. 17/e, 2019. Himalaya Publishing House. Aizel, Amir D and Sounderpandian, Jayavel. Complete Business Statistics, 6/e, 2019. Tata McGraw Hill.
Course Outcome (CO)	Upon completion of the curse the students will be able to: **CO1:** Successfully carryout Content Analysis. **CO2:** Identify and collect relevant data and use appropriate tool for analysing the data. **CO3:** Ensuring intellectual honesty and ethics while preparing research report.