M.Com - Business Analytics

Programme Objective:

Analytics and Data Science is impacting businesses worldwide and companies are on the lookout for professionals who are business ready in analytics.

Courses in Marketing, Retail Analytics, Finance and Risk Analytics, supply chain and logistics Analytics, social and web media analytics. Data mining, predictive modelling and Time series forecasting and Machine learning

Use of software like Phyton and R, Tableau

Learning Outcome

On successful completion of this Programme, learners will be able to:

- Understand and critically apply the concepts and methods of business analytics
- Identify, model and solve decision problems in different settings
- Acquire professional skills to critically analyse the theories and methods in this field; and choose the correct business analytics methods and use them in practice to draw logical conclusions and make recommendations in strategic decision-making situations
- Strategic understand business analytics and be able to take into account the relationships between this discipline and other areas of business to make holistic judgments when analysing business situations

Pedagogy:

- ICT enabled Classroom teaching / virtual platforms
- Case study
- Practical / live assignment
- Interactive class room discussions
- Internship/ Expert Lectures / Industry Interface

Career opportunity

Business Analyst, Data Scientist, market analyst, retail or healthcare analyst.

Research economist in public sector, international institutions

Who can apply for the Programme?

The student who has passed any degree of this University or any other recognized University shall be admitted to M.Com. Programme.

Duration of the Programme:

The M.Com. Programme will be of two years duration consisting of two parts .i.e. Part I and Part II. Each part is having Two Semester. Each Semester there will be Four Courses of 100 marks each .The M.Com Degree will be of 1600 Marks. Option for internship and Research project shall be exercised by the learners. Option shall be opened after giving due notice.

Intake Capacity: 60 Students

AC 29-04-22

R.A Podar College

Of

Commerce and Economics

(Autonomous)

Matunga, Mumbai

Syllabus

For

Post Graduate Programme

M.Com. (Business Analytics)

Semester I & II

CHOICE BASED CREDIT AND GRADING SYSTEM (CBCGS)

With effect from the academic year 2022-23

M.Com
(Business Analytics)
Under Choice Based Credit, Grading and Semester System
Course Structure
M.Com I

No. of Courses	Semester I	Credits	No. of Courses	Semester II	Credits
	Core Courses (CC)			**Core Courses (CC)**	
1	Introduction to Business Analytics	**06**	1	Introduction to Financial Analytics	**06**
2	Business Ethics	**06**	2	Data Visualisation and Communication	**06**
	Discipline Specific Courses			**Discipline Specific Courses**	
3	Introduction to Data Science I	**06**	3	Data Science II	**06**
	Ability Enhancement Compulsory Courses (AECC)			**Ability Enhancement Compulsory Courses (AECC)**	
4	R and Python For Data Science – Lab course	**06**	4	Research Methodology for Business	**06**
	Total Credits	**24**		**Total Credits**	**24**

M.Com II

No. of Courses	Semester III	Credits	No. of Courses	Semester IV	Credits
	Core Courses (CC)			**Core Courses (CC)**	
1	Machine Learning & Mining Algorithms	**06**	**1**	Predictive Analytics	**06**
2	Financial Accounting & Analysis	**06**	**2**	Supply chain Design and Management	**06**
	Elective Courses (EC)			**Elective Courses (EC)**	
3	*Any one courses from the following list of the courses A. Sales and Marketing analytics B. HR Analytics	**06**	3	**Any one courses from the following list of the courses A. Foundation of Behavioral Finance Analysis B. Retail Analytics	**06**
4	Project Work - I	**06**	4	Project Work - II	**06**
	Total Credits	**24**		**Total Credits**	**24**

Note: Project work is considered as a special course involving application of knowledge in solving/ analyzing/ exploring a real life situation/ difficult problem. Project work would be of 06 credits. A project work may be undertaken in any area of Elective Courses

Semester I
Core Courses (CC)

1. Introduction to Business Analytics

Modules at a Glance

SN	Modules/ Units	
	Modules	**No. of Lectures**
1	Basics of Business analytics	15
2	Visualization/ Data Issues	15
3	Introduction to Data Mining	15
4	Introduction to data communication	15
	Total	**60**

SN	Objectives
1	To enable the learners to understand the scope of Business analytics in today's era
2	To provide information pertaining to basics and principles of Business analytics
3	To develop learning and analytical skills of the learners to enable them to for Data visualization of multidimensional data
4	To acquaint the learners with recent developments and trends in Business analytics

Objectives

SN	Modules/ Units
1	Basics of Business analytics
	Concept of analytics, Types of Analytics, Application fields - Marketing Analytics, Finance Analytics, HR Analytics, Operation Analytics, Retail Analytics, Healthcare Analytics, Supply Chain Analytics - Role of Data Scientist in Business & Society
2	Visualization/ Data Issues
	Organization/sources of data - Structured Vs Semi structured Vs Unstructured data, Importance of data quality - Dealing with missing or incomplete data - Data Classification Types of Data Sources- Data Warehouse Vs Databases, Relational Database vs Non-Relational Database, RDBMS Data structures, Columnar Data structures
3	Introduction to Data Mining
	Introduction to Data Mining -Data Mining meaning - Data Mining Process - Data mining tool - Market Basket Analysis, Association Rules and clustering, Decision trees, Random forests
4	Business analytics future trends
	Role of Artificial Intelligence in Business, Machine Intelligence, Competitive Intelligence, Text Mining, Web Analytics (Web content mining, Web usage mining, Web structure mining), Role of Intelligent Agents in e-business, e-commerce, m-commerce, Location Analytics, Intelligent Agent in search & retrieval, Personalization and Comparison), Social Networking Analysis, Big Data Tools & Techniques, Content Analytics (Sentimental Analysis & Opinion Analysis). Ethical and Legal considerations in Business Analytics

Suggested Readings

1. Essentials of Business Analytics: An Introduction to the methodology and its application, Bhimasankaram Pochiraju, Sridhar Seshadri, Springer
2. Ben Fry- Visualizing Data. Released December 2007. Publisher(s): O'Reilly Media, Inc.
3. An Introduction to Business Analytics, Ger Koole, Lulu.com, 2019

Semester I
Core Courses (CC)

2. Business Ethics

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Business Ethics	15
2	Indian Ethical Practices and Corporate Governance	15
3	Management Ethics - Integrity at work	15
4	Corporate Responsibility	15
Total		**60**

Objectives

SN	Objectives
1	To familiarize the learners with the concept and relevance of Business Ethics in the modern era
2	To enable learners to understand the scope and complexity of Corporate Social responsibility in the global and Indian context
SN	**Modules/ Units**
1	**Introduction to Business Ethics**
	● Business Ethics – Concept, Characteristics, Importance and Need for business ethics. Indian Ethos, Ethics and Values, Work Ethos. ● Various approaches to Business Ethics - Theories of Ethics- Friedman's Economic theory, Kant's Deontological theory, Mill & Bentham's Utilitarianism theory ● Gandhian Approach in Management and Trusteeship, Importance and relevance of trusteeship principle in Modern Business, Gandhi's Doctrine of Satya and Ahimsa.
2	**Indian Ethical Practices and Corporate Governance**
	● Corporate Governance: Concept, Importance, Evolution of Corporate Governance, Principles of Corporate Governance, ● Regulatory Framework of Corporate Governance in India, SEBI Guidelines and clause 49, Audit Committee, Role of Independent Directors, Protection of Stake Holders, Changing roles of corporate Boards. ● Elements of Good Corporate Governance, Failure of Corporate Governance and its consequences
3	Management Ethics - Integrity at work
	● Sources of Ethics, Ethical dilemma in business and ethical implications. ● Ethics in Finance: Unethical financial practices – creative accounting- hostile takeovers tax evasion- corporate crimes. ● Ethics in Human Resources Management: Human resource system- psychological expectancy model- Individualism versus collectivism in human resource management practices

	● Ethics and Information Technology: Ethical issues relating to computer applications; security threats – computer crime- computer viruses- software piracy- hacking – computer crime prevention – ethical dilemmas and considerations.
4	**Corporate Responsibility**
	● Corporate philanthropy, Models for Implementation of CSR, Drivers of CSR, ● Designing CSR Policy- Factors influencing CSR Policy, Role of HR Professionals in CSR ● Global Recognitions of CSR- ISO- 14000-SA 8000 – AA 1000 – Codes formulated by UN Global Compact – UNDP, Global Reporting Initiative; major codes on CSR. ● CSR and Sustainable Development ● CSR through Triple Bottom Line in Business

Suggested Readings

- Sharma J.P ' Corporate Governance, business ethics and CSR, Ane Books Pvt Ltd, New Delhi
- Sharma J.P. Corporate Governance and Social Responsibility of business, Ane Books Pvt ltd, New Delhi
- S.K.Bhatia, Business Ethics and Corporate Governance
- William Shaw, Business Ethics, Wordsworth Publishing Company, International Thomson Publishing Company.
- Corporate Crimes and Financial Frauds, Dr. Sumit Sharma, New Delhi India
- R.C. Sekhar, Ethical choices in Business, Sage Publications, New Delhi
- Business Ethics, Andrew Crane and Dirk Matten, Oxford University Press.
- Business Ethics, Text and Cases, C.S.V. Murthy, Himalaya Publication House.
- Mallin, Christine A. Corporate Governance (Indian Edition) Oxford University press. New Delhi
- Blow field ,Michael and Alan Murray, Corporate Responsibility, Oxford University Press,
- Philip Kotler and Nancy Lee, CSR : doing the most good for Company and your cause , Wiley 2005
- Beeslory, Michel and Evens, CSR , Taylor and Francis, 1978
- Subhabrata Bobby Banerjee, CSR: the good, the bad and the ugly. Edward Elgar Publishing 2007
- Joseph A. Petrick and John F. Quinn, Management Ethics- Integrity at work , Sage Publication , 1997
- Francesco Perrini, Stefano and AntanioTencati, Developing CSR- A European Perspective , Edward Elgar.
- William B. Werther, Jr. David Chandler, Strategic Corporate Social Responsibility, stakeholders' a global environment, Sage Publication, 2009.
- Ellington. J. (1998), Cannibals with forks: The triple bottom line of 21st Century business, New Society Publishers.

Semester I
Discipline Specific Courses (DSC)

3. Introduction to Data Science I

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction	15
2	Data Collection and Data Pre-Processing	15
3	Model Development	15
4	Model Evaluation	15
Total		**60**

Objectives

SN	Objectives
1	To familiarize the learners with the concept and Foundation of Data Science
2	To enable learners to understand the scope and complexity of data science

SN	Modules/ Units
1	**Introduction to Data Science**
	What is Data Science? Introduction to Data Science – Evolution of Data Science – Data Science Roles – Stages in a Data Science Project – Applications of Data Science in various fields – Data Security Issues.
2	Data Collection and Data Pre-Processing
	Data Collection Strategies – Data Pre-Processing Overview – Data Cleaning – Data Integration and Transformation – Data Reduction – Data Discretization.
3	Model Development
	Simple and Multiple Regression – Model Evaluation using Visualization – Residual Plot – Distribution Plot – Polynomial Regression and Pipelines – Measures for In-sample Evaluation – Prediction and Decision Making
4	Model Evaluation
	Generalization Error – Out-of-Sample Evaluation Metrics – Cross Validation – Overfitting – Under Fitting and Model Selection – Prediction by using Ridge Regression – Testing Multiple Parameters by using Grid Search.

Suggested Readings

- Jojo Moolayil, “Smarter Decisions: The Intersection of IoT and Data Science”, PACKT, 2016.
- Cathy O’Neil and Rachel Schutt , “Doing Data Science”, O'Reilly, 2015.
- David Dietrich, Barry Heller, Beibei Yang, “Data Science and Big data Analytics”, EMC 2013
- Raj, Pethuru, “Handbook of Research on Cloud Infrastructures for Big Data Analytics”, IGI Global.

Semester I
Ability Enhancement Compulsory Courses (AECC)

4. R and Python For Data Science – Lab course

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to R	15
2	Matrices, Arrays and Data Frames	15
3	Introducing to Python	15
4	Series and Data Frames	15
Total		60

Objectives

SN	Objectives
1	To enable the students to know about the information needs of Management
2	To introduce the concepts of data analysis methods
3	To have hands-on training of Statistical Data Analysis through R Programming and Python Programming

SN	Modules/ Units
1	**Introduction to R**
	Introducing to R – R Data Structures – Help functions in R – Vectors – Scalars – Declarations – recycling – Common Vector operations – Using all and any – Vectorised operations – NA and NULL values – Filtering – Vectorised if-then else – Vector Equality – Vector Element names
2	**Matrices, Arrays and Data Frames**
	Creating matrices – Matrix operations – Applying Functions to Matrix Rows and Columns – Adding and deleting rows and columns – Vector/Matrix Distinction – Avoiding Dimension Reduction – Higher Dimensional arrays – lists – Creating lists – General list operations – Accessing list components and values – applying functions to lists – recursive lists Creating Data Frames – Matrix-like operations in frames – Merging Data Frames – Applying functions to Data frames – Factors and Tables – factors and levels – Common functions used with factors – Working with tables
3	**Introducing to Python**
	Introduction of Python, Juypter Notebook, Python Functions, Python Types and Sequences, Python More on Strings, Reading and Writing CSV files Advanced Python Objects, map(), Numpy, Pandas, Visualization DataMatplotlib, Bar Charts, Line Charts, Scatterplots
4	**Series and data Frame**
	The Series Data Structure, Querying a Series, The DataFrame Data Structure, DataFrame Indexing and Loading, Querying a DataFrame, Indexing Dataframes, Merging Dataframes , Data

	Aggregation and Group Operations, Time Series, Date and Time Data Types and Tools, Time Series Basics, Date Ranges, Frequencies, and Shifting, Time Zone Handling, Periods and Period Arithmetic, Resampling and Frequency Conversion, Time Series Plotting, Moving Window Functions

Suggested Readings

1. R Cookbook", Paul Teetor
2. "R for Data Science", Garrett Grolemund and Hadley Wickham
3. "Hands-On Programming with R", Garrett Grolemund
4. "An Introduction to Statistical Learning: With Applications in R", Daniela Witten, Gareth James Robert Tibshirani, and Trevor Hastie
5. "Learning Python", David Ascher and Mark Lutz
6. "Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython", Wes McKinney
7. "Introduction to Machine Learning with Python: A Guide for Data Scientists", Andreas C. Muller and Sarah Guido

METHODOLOGY

The methodology is predominantly by Problem Solving [using R Programming and Python], supplemented by lecture mode and case discussion.

Semester II
Core Courses (CC)

1. Introduction to Financial Analytics

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Financial Analytics	15
2	Financial Modeling	15
3	Financial Securities	15
4	Emerging Trends	15
Total		**60**

Objectives

SN	Objectives
1	To equip students with an understanding of the "importance and role of financial analytics" in modern business enterprises and how business firms can take advantage of financial analytics.
2	Students who wish to specialize in analytics, the course provides a strong foundation in the application of financial analytics with analytical platforms.

SN	Modules/ Units
1	Introduction to Financial Analytics
	Introduction: Meaning- scope and relevance of Financial Analytics uses- Features-Documents used in Financial Analytics: Balance Sheet, Income Statement, Cash flow statement-Elements of Financial Health: Liquidity, Leverage, Profitability. Recent trends in financial analytics
2	Financial Modeling
	Financial statement analysis and their interlinking, Equity and bond analysis, Valuation of equity and business (firm), basic portfolio analysis, project finance modelling, risk-return modelling, capital structure analysis, dividend policy and derivatives analytics.
3	Financial Securities
	Financial Securities: Bond and Stock investments - Housing and Euro crisis - Securities Datasets and Visualization - Plotting multiple series. Time Series and Sharpe ratio - Sharpe Ratio for Income Statement growth.
4	Emerging Trends
	Fintech: IT-enabled financial innovations and the current trend, Emerging Fintech techniques – Social trading, P2P lending, Blockchain, Algorithm trading basics

- Business Analytics for Managers - GEAT H.N.LAURSEN JESPER THORLUND,
- Fundamentals of Business Analytics -R N Prasad,. Seema Achavya, Wiley India Pvt Ltd,New Delhi,
- Financial Analytics with R _ Mark J. Bennets, Cambridge University Press
- Fundamentals of Business Analytics - R N Prasad Seema Achavya, Cengage Learning, NewDelhi,
- Journal of Marketing Analytics, Springer
- Financial Analysts Journal, Taylor & Francis

Semester II
Core Courses (CC)

2. Data Visualisation and Communication

Modules at a Glance

SN	Modules/ Units	
	Modules	**No. of Lectures**
1	Basics of Data Visualization	15
2	Principles of Data Visualization	15
3	Data visualization of multidimensional data	15
4	Introduction to data communication	15
	Total	**60**

SN	Objectives
1	To enable the learners to understand the scope of Data Visualisation and Communication in today's era
2	To provide information pertaining to basics and principles of Data Visualisation and Communication
3	To develop learning and analytical skills of the learners to enable them to for Data visualization of multidimensional data
4	To acquaint the learners with recent developments and trends in Data Visualisation and Communication

Objectives

SN	Modules/ Units
1	Basics of Data Visualization
	Introduction to Data Visualization, Challenges of Data Visualization, Definition and Types of Dashboard, Evolution of Dashboard, Dashboard Design and Principles, Display Media for Dashboard, Types of Data Visualization: Basic Charts Scatter Plots, Histogram, Advanced Visualization Techniques Like Streamline and Statistical Measures, Plots, Graphs, Networks, Hierarchies, Reports.
2	Principles of Data Visualization
	The Seven Stages of Visualizing Data: Why Data Display Requires Planning, Iteration and Combination, Principles, Getting Started with Processing: Sketching with Processing, Exporting and Distributing Your Work, Examples and Reference, Functions, Sketching and Scripting, Mapping: Drawing a Map, Locations on a Map, Data on a Map Using Your Own Data.
3	Data visualization of multidimensional data

	Need of Data Modeling, Multidimensional Data Models, Mapping of High Dimensional Data into Suitable Visualization Method-Principal Component Analysis, Clustering Study of High Dimensional Data, Visualization Tools.
4	Introduction to data communication
	Data Communication, Networks, Protocols and Standards, Standards Organizations. Line Configuration, Topology, Transmission Modes, Categories of Networks Internet works, Study of OSI and TCP/IP protocol suit, The Model, Functions of the layers, TCP/IP Protocol Suites

Suggested Readings

2. Alice Zheng- Evaluating Machine Learning Models: A Beginner's Guide to Key Concepts and Pitfalls, O'Reilly Media, 2015,
3. Big data black book, Dream Tech Publication.
4. Ben Fry- Visualizing Data. Released December 2007. Publisher(s): O'Reilly Media, Inc.
5. Data Science Using Python and R by Chantal D. Larose and Daniel T. Larose, Wiley Publication.
6. Python for Data Science and Visualization -Beginners to Pro, Udemy.
7. Data communication & Networking by Bahrouz Forouzan.
8. Data and Computer Communications by William Stallings

Semester II
Discipline Specific Courses (DSC)

3. Foundation of Data Science II

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction	15
2	Data Processing	15
3	Basic Machine Learning Algorithms	15
4	Clustering	15
Total		**60**

Objectives

SN	Objectives
1	To familiarize the learners with the concept and ***Foundation of Data Science***
2	To enable learners to understand the scope and complexity of data science

SN	Modules/ Units
1	**Introduction**
	Big Data and Data Science – Datafication – Current landscape of perspectives – Skill sets needed; Matrices – Matrices to represent relations between data, and necessary linear algebraic operations on matrices -Approximately representing matrices by decompositions (SVD and PCA).
2	Data Processing
	Data cleaning – data integration – Data Reduction Data Transformation and Data Discretization. Evaluation of classification methods – Confusion matrix, Students T-tests and ROC curves- Exploratory Data Analysis – Basic tools (plots, graphs and summary statistics) of EDA, Philosophy of EDA – The Data Science Process.
3	Basic Machine Learning Algorithms
	Association Rule mining - Linear Regression- Logistic Regression - Classifiers - k-Nearest Neighbours (k-NN), k-means -Decision tree - Naive Bayes- Ensemble Methods - Random Forest. Feature Generation and Feature Selection - Feature Selection algorithms - Filters; Wrappers; Decision Trees; Random Forests.
4	Clustering
	Clustering: Choosing distance metrics - Different clustering approaches - hierarchical agglomerative clustering, k-means (Lloyd's algorithm), - DBSCAN - Relative merits of each method - clustering tendency and quality.

Suggested Readings

- Cathy O'Neil and Rachel Schutt, "Doing Data Science, Straight Talk from The Frontline", O'Reilly, 2014.
- Jiawei Han, Micheline Kamber and Jian Pei, "Data Mining: Concepts and Techniques", Third Edition. ISBN 0123814790, 2011.
- Mohammed J. Zaki and Wagner Miera Jr, "Data Mining and Analysis: Fundamental Concepts and Algorithms", Cambridge University Press, 2014.ferences
- Matt Harrison, "Learning the Pandas Library: Python Tools for Data Munging, Analysis, and Visualization, O'Reilly, 2016.
- Joel Grus, "Data Science from Scratch: First Principles with Python", O'Reilly Media, 2015.

Semester II
Ability Enhancement Compulsory Courses (AECC)

4. *Research Methodology for Business*

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Research	15
2	Research Process	15
3	Data Processing and Statistical Analysis	15
4	Research Reporting and Modern Practices in Research	15
	Total	**60**

Objectives

SN	Objectives
1	To enhance the abilities of learners to undertake research in business & social sciences
2	To enable the learners to understand, develop and apply the fundamental skills in formulating research problems
3	To enable the learners in understanding and developing the most appropriate methodology for their research
4	To make the learners familiar with the basic statistical tools and techniques applicable for research

SN	Modules/ Units
1	**Introduction to Research**
	● Features and Importance of research in business, Objectives and Types of research- Basic, Applied, Descriptive, Analytical and Empirical Research. ● Formulation of research problem, Research Design, significance of Review of Literature ● Hypothesis: Formulation, Sources, Importance and Types ● Sampling: Significance, Methods, Factors determining sample size
2	**Research Process**
	● Stages in Research process ● Data Collection: Primary data: Observation, Experimentation, Interview, Schedules, Survey, ● Limitations of Primary data ● Secondary data: Sources and Limitations, ● Factors affecting the choice of method of data collection. ● Questionnaire: Types, Steps in Questionnaire Designing, Essentials of a good questionnaire
3	**Data Processing and Statistical Analysis**
	● Data Processing: Significance in Research, Stages in Data Processing: Editing, Coding, Classification, Tabulation, Graphic Presentation ● Statistical Analysis: Tools and Techniques, Measures of Central Tendency, Measures of Dispersion, Correlation Analysis and Regression Analysis. ● Testing of Hypotheses – ▪ Parametric Test-t test, f test, z test

	▪ Non-Parametric Test -Chi square test, ANOVA, Factor Analysis ● Use of R software
4	**Research Reporting and Modern Practices in Research**
	● Research Report Writing: Importance, Essentials, Structure/ layout, Types ● References and Citation Methods: ▪ APA (American Psychological Association) ▪ CMS (Chicago Manual Style) ▪ MLA (Modern Language Association) ● Footnotes and Bibliography ● Modern Practices: Ethical Norms in Research, Plagiarism, Role of Computers in Research

Suggested Readings

- Research Methodology – Text and Cases with SPSS Applications, by Dr S.L. Gupta and Hitesh Gupta, International Book House Pvt Ltd
- Business Research Methodology by T N Srivastava and Shailaja Rego, Tata Mcgraw Hill Education Private Limited, New Delhi
- Methodology of Research in Social Sciences, by O.R. Krishnaswami, Himalaya Publishing House
- Research Methodology by Dr Vijay Upagude and Dr Arvind Shende
- Business Statistics by Dr S. K Khandelwal, International Book House Pvt Ltd
- Quantitative Techniques by Dr S. K Khandelwal, International Book House Pvt Ltd
- SPSS 17.0 for Researchers by Dr S.L Gupta and Hitesh Gupta, 2nd edition, Dr S. K Khandelwal, International Book House Pvt Ltd
- Foundations of Social Research and Econometrics Techniques by S.C. Srivastava, Himalaya publishing House
- Statistical Analysis with Business and Economics Applications, Hold Rinehart & Wrintston, 2nd Edition, New York
- Business Research Methods, Clover, Vernon T and Balsely, Howard L, Colombus O. Grid, Inc
- Business Research Methods, Emary C.Willima, Richard D. Irwin In. Homewood
- Research Methods in Economics and Business by R. Gerber and P.J. Verdoom, The Macmillan Company, New York Research and Methodology in Accounting and Financial Management, J.K Courtis
- Statistics for Management and Economics, by Menden Hall and Veracity, Reinmuth J.E
- Panneerselvam, R., Research Methodology, Prentice Hall of India, New Delhi, 2004.
- Kothari CR, Research Methodology- Methods and Techniques, New Wiley Ltd., 2009

Evaluation:

Students shall be evaluated on the following components:

A Internal Evaluation (Internal Assessment- 40 Marks)

- Quiz/ class test/ case study/ review of Literature

B End –Semester Examination (External Assessment-60 Marks)

Question Paper Pattern (Practical Courses and Theoretical Courses)

Maximum Marks: 60
Questions to be set: 04
Duration: 2 Hrs.

All Questions are Compulsory Carrying 15 Marks each.

Question No	Particular	Marks
Q1	Full length Question/Practical Question OR	15 marks
Q1	Full length Question/Practical Question	15 marks
Q2	Full length Question/Practical Question OR	15 marks
Q2	Full length Question/Practical Question	15 marks
Q3	Full length Question/Practical Question OR	15 marks
Q3	Full length Question/Practical Question	15 marks
Q4	Full length Question/Practical Question OR	15 marks
Q4	Full length Question/Practical Question	15 marks

Note: Full length question of 15 marks may be divided into two sub questions of 08 and 07 marks.

	Particular
1	Standard of Passing The learner to pass a course shall have to obtain a minimum of 40% marks in aggregate for each course where the course consists of Internal Assessment & Semester End Examination. The learner shall obtain minimum of 40% marks (i.e. 16 out of 40) in the Internal Assessment and 40% marks in Semester End Examination (i.e. 24 out of 60) separately, to pass the course and minimum of Grade E in the project component, wherever applicable to pass a particular semester. A learner will be said to have passed the course if the learner passes the Internal Assessment & Semester End Examination together.