M.Com. Financial Technology

Syllabus

UNIVERSITY DEPARTMENTS

Program Code: ***

2023 – 2024 Onwards

BHARATHIAR UNIVERSITY

(A State University, Accredited with "A++" Grade by NAAC,
Ranked 21st among Indian Universities by MHRD-NIRF)

Coimbatore - 641 046, Tamil Nadu, India

Program Educational Objectives (PEOs)	
The **M.Com (Financial Technology)** program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	With finance and Technology knowledge graduates will be able to work in the emerging fields of Financial Technology
PEO2	Graduates can enroll for higher studies and pursue career in research
PEO3	IT Giants like TCS, Wipro, Infosys, HCL etc., and BFSI giants are ready to hire graduates with finance and accounting with computer skills.
PEO4	Graduates will take financial advisory service role
PEO5	Graduates will be able to clear Net /SLET which places them in the teaching job
PEO6	Graduates will be able to work in the challenging and demanding work environment of Financial service industry
PEO7	Graduates will be able to pursue advance degrees like Ph.D., with specialization
PEO8	Graduates will be able to provide solutions in the field of Finance and Technology
PEO9	Graduates will be able to get jobs in private, public and Government sectors
PEO10	Graduates are prepared to participate in diverse sectors of the economy

Program Specific Outcomes (PSOs)	
After the successful completion of **M.Com (Financial Technology)** program, the students are expected to	
PSO1	Develop Skills to work in the financial supporting services
PSO2	Develop the skills on the application of statistical tools in Business decision-making
PSO3	Develop skills to participate and provide advisory in the capital market
PSO4	Graduates will have proficiency to attend professional exams
PSO5	Students will be able to take up a job in emerging financial technology domain

Program Outcomes (POs)	
On successful completion of the **M.Com (Financial Technology)** program	
PO1	To provide a comprehensive domain knowledge of Finance, Accounting and Research
PO2	To develop proficiency in applying technical skill / Modern Technology in Business and Management.
PO3	To apply the acquired knowledge to take appropriate decisions for complex business Problems.
PO4	To work independently and as a team by understanding the Business Ethics and Social Values.
PO5	To create a thrust for continuous learning and updating in the assigned work.
PO6	To train the student to meet the challenges in industry
PO7	To equip the students in the area of financial Technology.
PO8	To take up a research work
PO9	The practical exposure in finance and different technology papers helps the students to take a challenging jobs
PO10	To excel in applying various financial technology models and software's.

BHARATHIAR UNIVERSITY: COIMBATORE - 641 046
M.Com (Financial Technology) Curriculum (University Department)
(For the Students admitted during the Academic Year 2023 – 24 onwards)

Course code	Title of the course	Credits	Hours / Week		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
First Semester							
13A	Introduction to Financial Technology	4	4		25	75	100
13B	Financial Statement Analysis	4	4		25	75	100
13C	Quantitative Techniques for Finance	4	4		25	75	100
13D	Python for Finance	4	4		25	75	100
13E	Big Data Analytics	4	4		25	75	100
1EA	Oracle & RDBMS	4	4		25	75	100
	(or)						
1EB	Insurance and Risk Management *	4	4		25	75	100
Supportive	Offered by other Department	2	2		12	38	50
	Total	**26**					**650**
Second Semester							
23A	Applied Cost Accounting	4	4		25	75	100
23B	Stock Market Operations	4	4		25	75	100
23C	GST and Other Indirect Taxation	4	4		25	75	100
23D	AI / ML for Financial Sector	4	4		25	75	100
23E	Strategic Financial Management	4	4		25	75	100
2EA	Financial Derivatives	4	4		25	75	100
	(Or)						
2EB	Fixed Income Securities Markets *	4	4		25	75	100
Supportive	Offered by other Department	2	2		12	38	50
	Total	**26**					**650**
Third Semester							
33A	Data Analysis through SPSS	4	4		25	75	100
33B	Advanced Corporate Accounting	4	4		25	75	100
33C	Analytics for Finance	4	4		25	75	100
33D	Block Chain Management	4	4		25	75	100
33E	Security Analysis and Portfolio Management	4	4		25	75	100
3EA	Financial Modeling	4	4		25	75	100
	(Or)						
3EB	Internet of Things *	4	4		25	75	100
Supportive	Offered by other Department	2	2		12	38	50
	Total	**26**					**650**
Fourth Semester							
46I	Internship & Training	4	-		100	-	100
47V	Project & Viva –Voce	8	-		50	150	200
	Total	**12**					**300**
	Grand Total	**90**					**2250**

		Credits					
	ONLINE COURSE (Offered by Swayam, MOOCs, NPTEL Course etc.)						
	Online Course	2					
	VALUE ADDED COURSES						
1.	Credit Analyst (First Year)	4					
2.	Digital Marketing (Second Year)	4					
	CERTIFICATE COURSES (Any Two)	8					
1.	NCFM - Technical Analysis Module	https://www.nseindia.com/learn/self-study-ncfm-modules-intermediate-technical-analysis-module					
2.	Python 3.4.3 - Prof Kannan Moudgalya	https://onlinecourses.swayam2.ac.in/aic20_sp33/preview					
3.	Organizational Behaviour - Prof.(Dr.) Vishal Kumar	https://onlinecourses.swayam2.ac.in/cec22_ge25/preview					
4.	Communication Technologies in Education - Dr.Dhaneswar Harichandan	https://onlinecourses.swayam2.ac.in/cec22_ed30/preview					
5.	Supply Chain Management - Dr.P.Chitramani	https://onlinecourses.swayam2.ac.in/cec22_mg22/preview					
6.	State and Local Governance: Machinery & Processes - Dr (Prof) Ajmer Singh Malik	https://onlinecourses.swayam2.ac.in/cec22_hs45/preview					
7.	Corporate Law - Prof. (Dr.) Harpreet Kaur	https://onlinecourses.swayam2.ac.in/cec22_lw13/preview					
8.	Business Environment - Chhavi Jain	https://onlinecourses.swayam2.ac.in/imb22_mg28/preview					
9.	Continuous Quality Improvement: Tools and Techniques - Dr. Sanjeev Singh	https://onlinecourses.swayam2.ac.in/imb22_mg30/preview					
10.	BCOS-184 E-Commerce - Dr. Subodh Kesharwani	https://onlinecourses.swayam2.ac.in/nou22_cm20/preview					

Note:

*** Elective Paper**

- Students can opt the elective paper
- 1EA, 2EA,and 3EA will be in teaching mode.
- 1EB,2EB, and 3EB will be in self-learning mode.

** All the students must complete the online course offered by Swayam within three semesters and the certificate must be submitted to the **Controller of Examinations, Bharathiar University** through the Head of the Department for inclusion of Credits in the Marks statement.

***All the students must complete any 2 courses from the above listed course and submit the certificate in the department on or before the end of third semester. Department will further submit the same to the **Controller of Examinations, Bharathiar University** for inclusion of Credits in the Marks Statement.

Supportive Courses offered to other Departments

Paper – I Principles of Accounting 2

Paper – II Principles of Modern Banking 2


First
Semester

Course code	13A	INTRODUCTION TO FINANCIAL TECHNOLOGY	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in Computer Application	Syllabus Version	2023-24		

Course Objectives:

The main objectives of this course are to:

- To learn the basic of Fintech and emerging technologies.
- To understand the framework of block chain
- To Learn Cypto currency and Block chain technology
- To learn various analytics tools used in financial service industry
- To learn the basic concepts of machine learning

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand global FinTech landscape and describe the role of banks and financial service providers in shaping and responding to innovation and disruption	K2
2	Apply the concepts of block chain	K3
3	Familiarize with Crypto Currency Mechanism	K2
4	Remember the basics of data analysis	K1
5	Evaluate the applications of machine learning	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	Introduction to Fintech	10 Hours

Overview of Fintech Disruptions in the area of Payments, Wealth Management, Investments, Lending, Reg Tech and Insurance Tech Fintech Hubs-The History of Fintech- Block chain, Wearable's and Other Emerging Technologies

Unit II	Block Chain	12 Hours

History of Ledger and Accounting practices, Decentralized Ledger concepts and Business rules, Basics of block chain technology: Block chain Technology Stack-Blocks-Mining-Consensus-Distributed Databases-Ethereum Smart Con Contracts-Security

Unit III	Crypto currency	12 Hours

Crypto Currency: Evolution of Crypto currencies-A brief on ICO's-Block chain Frameworks Block chain Implementation: Block chain as a Financial System-Block chain for Provenance Tracking-Block chain for Interorganisational Record / Asset-keeping-Block chain for Multi-party Aggregation.

Unit IV	Analytics:	10 Hours

An Introduction to Data Analytics- Role of Analytics in the Modern World-Types of Analytics: Descriptive, Diagnostic, Predictive, Prescriptive-Data Analytics and Ethical Issues, Basics of Statistical Analysis: Descriptive and Inferential Statistics-Mean/Median/Mode-Standard Deviation/Covariance/Correlation, Basics of Python for Data Analysis: Installation of Anaconda-Data Types and Functions-Data Manipulation and Preparation, Data Visualization in Python, Sentiment Analysis.

Unit V	Introduction to Machine Learning	14 Hours

An Introduction to Machine Learning-Evolution of ML- Trends in ML-Application of Machine Learning-Best Practices of Machine Learning-Machine Learning in future-Machine Learning Algorithms: Classification-Regression-Forecasting-Clustering, Neural Networks: Perception Learning-Back propagation Learning-Object Recognition, Deep Learning – Keras:-Setting up KERAS-Creating a Neural Network-Training Models and Monitoring-Artificial Neural Networks

Unit:6	**Contemporary Issues**	**2 Hours**
Webinars – Quiz - Online Assignments		
	Total Lecture Hours	**60 Hours**

Note: Question paper shall cover 100% theory.

Books for Study

1	Sanjay Phadke (2020), Fintech Future : The Digital DNA of Finance, SAGE Publications
2	Seth Swanson, FinTech: For Beginners! Understanding & Utilizing The Power Of Financial Technology, Createspace Independent Pub

Books for Reference

1	Susanne Chishti and Janos Barberis (2016), The FINTECH Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries, Wiley
2	Parag Y Arjunwadkar (2018),FinTech: The Technology Driving Disruption in the Financial Services Industry, Auerbach Publications
3.	Richard Hayen, FinTech: The Impact and Influence of Financial Technology on Banking and the Finance Industry, Createspace Independent Pub

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	

Course Designed By: NSE ACADEMY LTD / E-Mail ID:

Mapping with Programme Outcomes

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	M	M	M	M	M	M	M	M	M	M
CO2	M	M	M	S	S	S	S	S	M	S
CO3	M	S	M	S	S	S	S	S	M	M
CO4	M	S	S	S	S	S	S	S	S	S
CO5	M	S	S	S	S	S	S	S	S	S

*S - Strong; M - Medium; L - Low

Course code	13B	FINANCIAL STATEMENT ANALYSIS	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in Accounting	Syllabus Version		**2023-24**	

Course Objectives:

The main objectives of this course are to:

- To acquire knowledge in the techniques of Management Accounting.
- To understand need for Working Capital.
- To lay a base for budgeting and Budgetary Control

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Interpret the Financial Statements.	K3
2	Compute Working Capital Requirements	K3
3	Prepare the Fund Flow and Cash Flow Statement	K4
4	Prepare different types of Budget	K5
5	Helps Management in Decision Making	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	**Introduction to Management Accounting**	**10 Hours**

Nature and Scope of Management Accounting – Functions – Financial Accounting Vs Management Accounting – Relationship Between cost and Management Accounting – Tools Techniques of Management Accounting and Financial Statement Analysis.

Unit:2	**Ratio Analysis**	**12 Hours**

Ratio Analysis – Advantages – Limitations – Classification of Ratios – Working Capital Management - Determinants and Computation of Working capital – Forecast of Working Capital Requirements.

Unit:3	**Fund Flow and Cash Flow Statement**	**12 hours**

Funds Flow Statement – Concept of Funds and Flow of Funds – Importance of Funds Flow Statements – Limitations – Schedule of Changes in Working Capital – Preparation of Funds Flow Statement – Cash Flow Statement – Funds Flow Statement Vs Cash Flow Statement – Uses of Cash Flow Statement – Limitations – Preparation of Cash Flow Statement.

Unit:4	**Budgeting and Budgetary Control**	**12 Hours**

Budgeting and Budgetary Control – Objectives of Budgetary Control – Essentials of Budgetary Control – Advantages – Limitations – Classification and Types of Budgets – Sales, Production, Cost of Production, Purchase and Flexible Budgets – Cash Budget.

Unit:5	**Standard Costing**	**12 Hours**

Standard Costing and Variance Analysis - Advantages and Limitations of Standard Costing – Distinguish between budgetary control and standard costing – Introduction of Standard Costing System – Variance Analysis and Computation of Variances.

Unit:6	**Contemporary Issues**	**2 Hours**
Expert lectures, online seminars – webinars		
	Total Lecture Hours	**60 Hours**
Note: Question Paper shall cover 40% Theory and 60% Problems		
Books for Study		
1	S.N.Maheswari, "Management Accounting", Vikas Publishing House, New Delhi, 2018	
2	M.Y Khan &P.K.Jain, "Management Accounting and Financial Analysis", Tata McGraw Hill Publishing Company Limited, New Delhi, 2006	
Books for Reference		
1	R.K.Sharma& Shashi K.Gupta, "Management Accounting Principles and Practice", Kalyani Publishers, New Delhi, 2009	
2	Manmohan Goyal, "Management Accounting", SahityaBhawan Publishers and Distributors Pvt Ltd, Uttar Pradesh, 2007	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://swayam.gov.in/nd1_noc20_mg65/preview	
2	https://swayam.gov.in/nd2_imb20_mg31/preview	
Course Designed By: Dr. M. Jegadeeshwaran / E-Mail ID: drmjegadeesh@gmail.com		

Mapping with Programme Outcomes										
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	S	S	S	M	M	M
CO2	S	S	S	S	S	S	S	M	M	M
CO3	S	S	S	S	S	S	S	M	M	M
CO4	S	S	S	S	S	S	S	M	M	M
CO5	S	S	S	S	S	S	S	M	M	M

*S-Strong; M-Medium; L-Low

Course Code	13C	QUANTITATIVE TECHNIQUES FOR FINANCE	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic knowledge in Statistics and Operations Research	**Syllabus Version**		**2023-24**	

Course Objectives:

The main objectives of this course are:

1. To understand the various applications used in QT for finance decision
2. To apply the various quantitative techniques to solve business problems
3. To determine and evaluate the project to minimize the cost and time
4. To be able to select the best course of action and to improve the professional skills for their business

Expected Course Outcomes:

On the successful completion of the course, students will be able to:

1	understand the basic theory of probability and applications of theoretical distribution in finance	K2
2	Know the role and applications of queuing theory, simulation and time series in business for financial analysis.	K3
3	Analyze and interpret the various index numbers in business and to know the economic and business index in India.	K4
4	Determine and evaluate the project to minimize the cost and time through CPM.	K5
5	Apply the inventory control technique to control the material cost and to identify the optimum profit through game theory that is minimized lose and maximize the profit.	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	**Probability Theory and Distribution**	**12 Hours**

Probability – Definition- Addition and multiplication rules Probability distribution – Theoretical distributions – Binomial poison and normal – Simple problems applied to finance.

Unit:2	**Queuing Theory and Time Series Analysis**	**12 Hours**

Queuing theory – Applications to Business Decisions – Simulation – Monte Carlo Techniques - Time series – Components of time series – Use of time series data for financial analysis.

Unit:3	**Index Number and Its Applications**	**10 Hours**

Index numbers – concepts – simple and weighted index numbers – Economic and business index numbers published in India

Unit:4	**Network Analysis**	**12 Hours**

Network Analysis - Managerial Applications - CPM / PERT network components - CPM - Methodology - Critical Path - Total Float, Free Float - Independent Float - Distinction Between PERT and CPM.

Unit:5	**Inventory Management and Game Theory**	**12 Hours**

Inventory Management - Determinants - Factors affecting Inventory Control - EOQ - inventory models - Types of Inventory models - Game theory - Zero sum Games: Arithmetic and Graphical Method,

Unit:6	**Contemporary Issues**	**2 Hours**
Expert lectures, online seminars - webinars,		
	Total Lecture Hours	**60 Hours**
Note: Question paper shall cover 40% theory and 60% Problems.		
Books for Study		
1	**C.R.Kothari**, (2019)"Quantitative Techniques", Vikas Publications, New Delhi	
2	**V.K. Kappor**, (2018) "Operations Research - Problems and Solutions", Sultan Chand & Sons Publisher, New Delhi,	
Books for Reference		
1	**E.A. Parameswara Gupta (2019)** Operations Research & Quantitative Techniques, Himalaya Publishing House Pvt. Ltd, Mumbai.	
2	S.P. Gupta (2019), "Statistical Methods", S.Chand& Sons Publisher, New Delhi.	
Note: Question Paper shall cover 40% Theory and 60% Problems.		
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://youtu.be/owLT5KDrqAs	
2	E-book: **P.K. Gupta and DS Hira, Operations Research, S. Chand Publishing, New Delhi**	
Course Designed By: Dr. P. Chellasamy / E-Mail ID: drchellamsamy@gmail.com		

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	M	S	S	S	M	S	S
CO2	S	S	S	M	S	S	S	S	S	M
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	M	S	S
CO5	S	S	S	S	S	S	M	M	M	M

*S-Strong; M-Medium; L-Low

Course code	13D	PYTHON FOR FINANCE	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic knowledge in computer application	**Syllabus Version**	**2023-24**		

Course Objectives:

The main objectives of this course are to:

- To provide a broad understanding of the principles and techniques of Python coding for finance applications.
- To get comfortable with the main elements of Python programming
- Write and execute basic Python code to perform advanced calculation, generate outputs, create variables, abstract from data, etc.
- To apply financial models and formulae.
- To illustrate how data analytics can improve financial decision-making.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	To perform advanced calculation, generate outputs, create variables, abstract from data using python.	K4
2	Learn python models and techniques that aid design, analysis and evaluation of financial decision-making.	K2
3	Learn and implement advanced machine learning models in finance using python	K2 & K3
4	Create Excel, Web and GUI based design for trading platforms to support analytics	K6
5	Attain a broad understanding of the principles of quantitative evidence based financial decision making	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	**Python and Finance**	**10 Hours**

Python- History of Python- Python Ecosystem- Technology in Finance- Rise of Real-Time Analytics- Finance and Python Syntax- Efficiency and Productivity Through Python- From Prototyping to Production- Python Deployment- Anaconda- IPython- Spyder- Algorithmic Trading- Python for Algorithmic Trading- Machine and Deep Learning.

Unit II	**Working with Financial Data**	**12 Hours**

Reading Financial Data from Different Sources- Working with Open Data Sources- Retrieving Historical Structured Data- Retrieving Historical Unstructured Data- Storing Financial Data Efficiently- The process of algorithmic trading- Moving averages- Technical analysis techniques- Crossovers- Pairs trading- Data Visualization- Two-Dimensional Plotting- One-Dimensional Data Set- Two-Dimensional Data Set- Other Plot Styles- Financial Plots- Financial Data- Regression Analysis.

Unit III	**Models and Concepts**	**14 Hours**

Supervised Learning Models: An Overview- Linear Regression- Ordinary Least Squares- Regularized Regression- Logistic Regression- K-Nearest Neighbors- Linear Discriminant Analysis- Classification and Regression Trees- Ensemble Models- ANN-Based Models- ANN using sklearn- Using ANNs for supervised learning in finance- Model Performance- Over fitting and Under fitting- Cross Validation- Evaluation Metrics- Unsupervised Learning: Dimensionality Reduction- Clustering Techniques- k-means Clustering.

Unit IV	**Advanced Machine Learning Models in Finance**	**12 Hours**

Investigating advanced classifiers- Random Forest- Gradient Boosted Trees- XG Boost- Using stacking for improved performance- Investigating the feature importance- Investigating different approaches to handling imbalanced data- Under sampling- Oversampling- SMOTE- Bayesian hyper parameter optimization.

Unit V	Financial Analytics and Development	10 Hours
Excel Integration- Basic Spreadsheet Interaction- Scripting Excel with Python- Object Orientation and Graphical User Interfaces- Object Orientation- Basics of Python Classes- Simple Short Rate Class- Cash Flow Series Class- Graphical User Interfaces- Short Rate Class with GUI- Updating of Values- Cash Flow Series Class with GUI- Web Integration- Web Basics- Web Plotting- Static Plots- Interactive Plots- Real-Time Plots- Rapid Web Applications- Web Services.		
Unit:6	**Contemporary Issues**	**2 Hours**
Webinars – Quiz - Online Assignments		
	Total Lecture Hours	**60 Hours**

Note: Question paper shall cover 100% theory.

Books for Study

1	Lookabaugh, B., Tatsat, H., Puri, S. (2020). Machine Learning and Data Science Blueprints for Finance. China: O'Reilly Media.
2	Machine Learning using Python, by U Dinesh Kumar Manaranjan Pradhan, Wiley
3	Hilpisch, Y. (2014). Python for Finance: Analyze Big Financial Data. United States: O'Reilly Media.
4	Hilpisch, Y. (2020). Python for Algorithmic Trading. United States: O'Reilly Media.
5	Fletcher, S., Gardner, C. (2010). Financial Modelling in Python. Germany: Wiley.

Books for Reference

1	Naik, K. (2019). Hands-On Python for Finance: A Practical Guide to Implementing Financial Analysis Strategies Using Python. United Kingdom: Packt Publishing.
2	Molin, S. (2019). Hands-On Data Analysis with Pandas: Efficiently Perform Data Collection, Wrangling, Analysis, and Visualization Using Python. United Kingdom: Packt Publishing.
3.	Lewinson, E. (2020). Python for Finance Cookbook: Over 50 Recipes for Applying Modern Python Libraries to Financial Data Analysis. United Kingdom: Packt Publishing.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://towardsdatascience.com/python-for-finance-the-complete-beginners-guide-764276d74cef
2	https://pythonforfinance.net/
3	https://github.com/yhilpisch/py4fi
	https://github.com/wilsonfreitas/awesome-quant

Course Designed By: NSE ACADEMY LTD / E-Mail ID:

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	S	S	M	S	M	S
CO2	M	L	L	M	M	S	M	S	M	S
CO3	M	L	L	L	M	M	M	S	M	S
CO4	M	S	S	S	S	S	S	S	M	M
CO5	M	M	S	S	S	S	M	S	M	M

*S - Strong; M - Medium; L - Low

Course code	13E	BIG DATA ANALYTICS	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in Computer Application	Syllabus Version	2023-24		

Course Objectives:

The main objectives of this course are to:

- To equip students with the fundamentals of Big Data and Big Data analytics with specific focus on Big Data ecosystem comprising of Hadoop Distributed File System (HDFS), Hive and Spark.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand theoretical concepts behind Big Data and Big Data analytics	K2
2	Decide on Big Data models relevant to business needs	K4
3	Understand and Appreciate algorithms behind predictive models used in Big Data Analytics	K2
4	Interpret the results of Big Data analytics and present through well-structured reports	K4
5	Understand the NOSQL and relevant application.	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	INTRODUCTION TO BIG DATA	10 Hours

Introduction to Big Data, different types of data, introduction to cloud computing, cloud computing concepts, cloud computing applications, cloud systems and infrastructure, Big Data applications in cloud, cloud networking. The components of a Big Data architecture. Extract-transform-load (ETL) layer. File system – HDFS. NoSQL DB. Hive. Hadoop. Kerberos. Pig. Cassandra. Other competing products.

Unit II	WORKING WITH HDFS AND HIVE	12 Hours

HDFS overview, installation, API. Hive architecture and installation. Comparison with traditional databases. HiveQL – querying data, sorting and aggregating

Unit III	WORKING WITH MAP REDUCE AND HBASE	12 Hours

Introduction to Map Reduce. Map Reduce scripts, joins and sub queries. HBase concepts, schema design, indexing. Pig. Zookeeper.

Unit IV	DATA ANALYSIS WITH SPARK	10 Hours

Introduction to Spark. Downloading, installing and getting started with Spark. Programming with Resilient distributed datasets. Machine learning with MLib.

Unit V	WORKING WITH NOSQL	14 Hours

Introduction to NoSQL. Types of NoSQL databases. Advantages and uses. SQL vs NoSQL. Using NoSQL to develop reports.

Unit:6	Contemporary Issues	2 Hours

Webinars – Quiz - Online Assignments – Case Study

	Total Lecture Hours	60 Hours

Note: Question paper shall cover 100% theory.

Books for Study

1	Seema Acharya and SubhashiniChellappa. Big Data and Analytics. 1st Edition. Wiley (2015)

Books for Reference

1	

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	

Course Designed By: Dr. M. Jegadeeshwaran / E-Mail ID: drmjegadeesh@gmail.com

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	M	M	M
CO2	M	M	M	S	S	S	S	S	M	S
CO3	M	S	M	S	S	S	S	S	M	M
CO4	M	S	S	S	S	S	S	S	S	S
CO5	M	S	S	S	S	S	S	S	S	S

*S - Strong; M - Medium; L - Low

Course code	1EA	ORACLE AND RDBMS	L	T	P	C
Elective			4	-	-	4
Pre-requisite		Fundamentals of Programming Languages	Syllabus Version	2023 - 24		

Course Objectives:

The main objectives of this course are to:

1. It aims to facilitate the student to understand the various functionalities of oracle and RDBMS, software and perform many operations related to creating, manipulating, maintaining data base for real-world applications and to understand various designing concepts, storage methods, querying and managing the database.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the database concepts and design.	K2
2	Applying basic components in oracle 8 for developing a programme.	K3
3	Analyse the sub queries and nested queries for developing a programme	K4
4	Know the importance of control structures in PL/SQL for developing a database.	K5
5	Create the cursors, exceptions, procedures, functions and packages	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	Database Concepts	10 Hours

Database concepts: A relational Approach – Database Management Systems (DBMS)– Relational Database Model – Integrity rules – Theoretical Relational Languages - Database Design: Data Modeling and Normalization.

Unit:2	Oracle 9i	11 Hours

Oracle 9i: An overview - Personal Databases – Client / Server Databases – Structured Query Language (SQL) – Oracle Tables: Data types – Constraints – Types of Constraints - Creating an Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping a Table – Renaming a Table – Truncating a Table – Spooling .Working with tables: Data Management and retrieval – Functions and. Grouping.

Unit:3	Multiple Tables and Subquery	11 Hours

Multiple Tables: Joins and Set Operations: Join – Types of Joins – SET Operators. Sub Queries: Nested Queries – Sub Query - Advanced Features: Objects, Transactions and Data Control – Views – Sequences – Synonyms – Index – Transactions - Controlling Access – Object privileges.

Unit:4	PL / SQL -A Programming Language	13 Hours

PL / SQL : A Programming Language: History of PL / SQL – Fundamentals of PL/SQL – Data types – Variable declaration - Control Structures and Embedded SQL: Control Structures – Nested Blocks – Data Manipulation in PL/SQL - Transaction Control Statements.

Unit:5	PL / SQL Cursors and Exceptions	13 Hours

PL / SQL Cursors and Exceptions: Cursors – Implicit Cursors – Explicit Cursors - Explicit Cursor Attributes – Implicit Cursor Attributes – Cursor for Loops – Exceptions – Types of Exceptions – PL/SQL Named Blocks : Procedure, Function, Packages and Triggers.

Unit:6	Contemporary Issues	2 Hours

Expert lectures, online seminars – webinars

Total Lecture Hours	60 Hours

Books for Study
Nilesh Shah, "Database Systems Using Oracle", Second Edition, PHI Learning Private Limited, New Delhi, 2004
Abraham Silberschatz Henry F.KorthS.Sudarshan, "Database System Concepts", Tata McGraw Hill Publishing Company Limited, Noida, UP, 2019
Books for Reference
Alexis Leon, Mathews Leon, "Essentials of Database Management Systems", Vijay Nicole Imprints Pvt Ltd, Chennai, 2005
Raghu Ramakrishnan& Johannes Gehrke, "Database Management Systems", Tata McGraw Hill Publishing Company Limited, Noida, UP, 2003
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]
https://swayam.gov.in/nd1_noc20_cs60/preview
https://swayam.gov.in/nd2_nou20_lb06/preview
https://swayam.gov.in/nd2_aic20_sp36/preview
Course Designed By: Dr.M.Dhanabhakyam / E-Mail ID: dhana_giri@rediffmail.com

Mapping with Programme Outcomes										
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	S	S	S	M	M	M
CO2	S	S	S	S	S	S	S	M	M	M
CO3	S	S	S	S	S	S	S	M	M	M
CO4	S	S	S	S	S	S	S	M	M	M
CO5	S	S	S	S	S	S	S	M	M	M

*S-Strong; M-Medium; L-Low

Course code	1EB	INSURANCE AND RISK MANAGEMENT	L	T	P	C
Core			4	-	-	4
Pre-requisite		Broad understanding of Risk and Insurance as a means to manage it.	**Syllabus Version**		**2023-24**	

Course Objectives:

The main objectives of this course are to:

1. Familiarize the basic concept, principles of insurance and role of IT in insurance industry.
2. Understand reforms of Indian insurance industry, private players to Indian insurance market, IRDA Regulations and licensing of insurance agents.
3. Develop an understanding of insurance industry and its types.
4. Lay a foundation of risk, risk management, and steps in risk management process.
5. Acquire knowledge in methods of risk management, control risk and tools for controlling Risk.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Explain the principles of insurance and differentiate re-insurance and double insurance	K1&K2
2	Analyze the position of Indian insurance industry, reforms and licensing of insurance agents.	K4
3	Classify the types of insurance policies and have knowledge on procedure for claiming Life.	K2 &K3
4	Analyse the risk, apply risk management techniques to control risk	K4
5	Able to identify, measure and apply relevant method for risk management.	K3

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	**Introduction to Insurance**	**10 Hours**

Introduction to Insurance: Role of Insurance – Characteristics of Insurance – Fundamental Legal Principles of Insurance – Reinsurance: Meaning – Concept – Function of re-insurance – Double Insurance – IT in Insurance.

Unit:2	**Indian Insurance Industry**	**12 Hours**

Indian Insurance Industry – Reforms – Private Players to Indian Insurance Market – IRDA Regulations: For Licensing of Insurance Agents – For Protection of Policy Holders Interest.

Unit:3	**Insurance Contract**	**14 Hours**

Insurance Contract: Life Insurance Contract – Features, Policy Conditions and Products; Non – Life Insurance: Fire and Marine - Features, Policy Conditions and Products. Group insurance: Meaning-Features-Advantage- Limitation- Eligible groups. Health and Social Insurance – Schemes. Procedure for claiming Life and Health Insurance.

Unit:4	**Risk and Uncertainty**	**12 Hours**

Introduction to Risk and Uncertainty: Concept of Risk – Types of Risk – Principles of Risk Management – Risk Management Process – Objectives of Risk Management – Steps in Risk Management Process.

Unit:5	**Risk Management and Control**	**10 Hours**
Risk Management and Control – Methods of Risk management – Risk Management by Individuals and Corporations – Tools for Controlling Risk.		
Unit:6	**Contemporary Issues**	**2 Hours**
Online seminars , online assignments– webinars		
	Total Lecture Hours	**60 Hours**

Books for Study	
1	Dr. P.K.Gupta, "Insurance and Risk Management", Himalaya Publishing House, Mumbai, first edition 2016.
2	Alka Mittal and S.L Gupta, "Principles of Insurance and Risk Management", S.Chand& Sons Publisher, New Delhi, 1 January 2013.
Books for Reference	
1	NaliniPravaTripathy and PrabirPai, "Insurance – Theory and Practice", Prentice Hall Pvt Ltd, New Delhi,2005.
2	Mark S. Dorfman, "Introduction to Risk Management and Insurance", Prentice Hall Pvt Ltd, New Delhi, 2005.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://resource.cdn.icai.org/13526Module-%20II.pdf
2	https://resource.cdn.icai.org/13525Module-1.pdf
3	https://resource.cdn.icai.org/13527Module-III.pdf
Course Designed By: Dr. N.Vijayalakshmi / E-Mail ID: nvijiphd@gmail.com	

Mapping with Programme Outcomes										
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	M	S	M	S	S	S	S	S
CO2	S	S	M	S	S	S	S	M	S	S
CO3	S	S	M	S	S	M	S	S	S	S
CO4	S	S	M	S	S	S	S	S	S	S
CO5	S	S	M	S	S	S	M	S	S	S

*S-Strong; M-Medium; L-Low

Second Semester

Course code	23A	APPLIED COST ACCOUNTING	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in the Cost Accounting	**Syllabus Version**		**2023-24**	

Course Objectives:

The main objectives of this course are to:

1. Acquaint students with the principles of cost accounting, difference between financial accounting and cost accounting.
2. recollect remuneration and incentives and introduce preparation of apportionment of overhead costs, methods of re-apportionment.
3. Learn process costing, differentiate job costing and process costing; distinguish joint products and by-products costing.
4. Make the learners to calculate breakeven point and understand applications of marginal costing for business decision making.
5. Enable the students to understand and apply cost accounting tools.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Recall the Cost Accounting Techniques, cost concepts and preparation of cost sheet.	K1 & K2
2	Explain labour remuneration and incentives, classification of overheads, apportionment of overhead costs, methods of re-apportionment in detailed way.	K2
3	Gain knowledge of process costing, able to differentiate job costing and process costing, distinguish joint products and by-products costing.	K4 & K3
4	Able to calculate breakeven point and applications of marginal costing for business decision making.	K4 & K5
5	Able to reconcile cost and financial accounts.	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	**Cost Accounting- Introduction**	**10 Hours**

Cost Accounting: Meaning and Definition – Objectives of cost accounting – Financial Accounting Vs Cost Accounting –Methods of Costing – Elements of Costing – Cost Concepts– Cost Accounting Regulations – Preparation of Cost Sheet

Material control: Meaning - need of material control - Essentials of material control - Techniques of Material Control - Level setting - EOQ-ABC analysis - Inventory Turnover Ratio

Unit:2	**Labour Cost and Overhead**	**14 Hours**

Labour Cost: Remuneration and Incentives - Essential features of a good wage system- Systems of wage payment - time wage system- Piece Rate system– Premium and bonus plans. Overhead: Meaning and Classification of Overheads – Steps in Overhead Accounting Allocation and Apportionment of overhead costs Centres - Bases of Apportionment- Principles of Apportionment of overhead costs – Methods of Re-apportionment

Unit:3	**Process Costing**	**12 Hours**

Process Costing : Features - Comparison between Job Costing and Process Costing – Process Losses – Inter Process Profit - Equivalent Production – Joint Products and By-Products Costing

Unit:4	**Marginal Costing**	**12 Hours**
Marginal Costing : Salient Features – Advantages – Limitations — Cost Volume Profit Analysis (Break-Even Analysis) – Applications of Marginal Costing for Business Decision making		
Unit:5	**Reconciliation of Cost and Financial Accounts**	**10 Hours**
Reconciliation of Cost and Financial Accounts: Need for Reconciliation – Reasons for Disagreement in Profit – Methods of Reconciliation – Circumstances in which reconciliation can be avoided. Activity Based Costing (ABC) – concept of ABC – Benefits of implementing ABC analysis		
Unit:6	**Contemporary Issues**	**2 Hours**
Expert lectures, online assignments, online test – webinars		
	Total Lecture Hours	**60 Hours**

Note: Question Paper shall cover 40% Theory and 60% Problems

Books for Study

1	Jain and Narang, “Advanced Cost Accounting”, Kalyani Publication, New Delhi, 2013.
2	Prof. M.L. Agrawal, Dr. K.L. Gupta "Advanced Cost Accounting Paperback" January 2018.

Books for Reference

1	Dr. S.N. Maheshwari Dr. S.N. Mittal, "Cost Accounting - Theory & Problems Paperback – 1, 2015
2	Horngren, “Cost Accounting with Managerial Emphasis”, Prentice Hall India, New Delhi, November 2017.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://www.accountingtools.com/articles/2017/5/7/applied-cost
2	http://www.businessdictionary.com/definition/applied-cost.html
3	https://www.thebalance.com/what-are-derivatives-3305833

Course Designed By: Dr. N.Vijayalakshmi / E-Mail ID: nvijiphd@gmail.com

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	S	S	S	S	M	S	S
CO2	S	S	M	S	S	S	S	S	S	S
CO3	S	S	S	S	S	M	S	S	S	S
CO4	S	S	M	S	S	S	S	S	M	S
CO5	S	S	M	S	S	S	M	S	S	S

*S - Strong; M - Medium; L - Low

Course code	23B	STOCK MARKET OPERATIONS	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in Financial market	Syllabus Version	**2023-24**		

Course Objectives:

The main objectives of this course are to:

1. Make the Students acquainted with how equity shares are issued and traded in the Stock Market.
2. Students are able to learn about the Trading, Clearing and Settlement Process.
3. Gain knowledge on Mutual Fund Investment.
4. Helps the students to understand the international stock indices and Invest in the International Market.
5. Learn the new dimensions in the Financial Market.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Remember the Functions of Primary and Secondary markets	K1
2	Understand the Trading Mechanism and how the funds and shares are settled in the market. Comprehend the knowledge on International Indices and try to make the investment in the International Market.	K2
3	Evaluate and Invest in Mutual Fund.	K5
4	Comprehend the knowledge on International Indices and try to make the investment in the International Market.	K2
5	Remember the New Paradigm in the Market.	K1

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	Overview on Stock Market	12 Hours

Primary Market: Meaning - Methods of New Issue - Primary Market Participants - Pricing of New Issues - IPO Application Process - ASBA - Underwriting - Allotment of Shares - Recent Trends in Primary Market - SEBI Guidelines on Primary Market. Secondary Market: Role of Secondary Market - Difference between Primary and Secondary Market - Market Segment and Products - Secondary Market Participant: Stock Exchange - Stock Brokers. Depositories. - Key Indicators of Securities Market: Index - Market Capitalization - Market Capitalization Ratio- Turnover - Turnover Ratio - Reforms in Indian Securities Markets.

Unit II		12 Hours

Trading, Clearing, Settlement and Risk Management: Trading mechanism – screen based system – Advantages of the Screen-Based Trading System - Market Types - Normal Market - Auction Market - Odd Lot Market - Retail Debt Market - Market Phases - Opening - Pre-open:- Normal Market Open Phase - Market Close - Post-Close Market - Surveillance and Control (Surcon) - Insider trading - Take-over's – Internet based trading - Procedure for opening Trading and DEMAT accounts - Clearing and Settlement - Introduction - Key Terminology - Transaction Cycle - Settlement Agencies - Clearing and Settlement Process - Settlement Cycle - Securities and Fund Settlement - Shortage Handling - Risk in Settlement - Risk Management. Corporate Action.

Unit III	Mutual Fund	10 Hours

Mutual Funds: Introduction - Structure in India - New Fund Offer - Mutual Fund Schemes: Equity - Debt and Liquid Funds - Exchange Traded Fund (ETFs): Equity ETF -Gold ETF - REIT - Infrastructure Investment Trust (InvITs) – International ETF - Sovereign Gold Bond.

Unit IV	International Market	13 Hours

Depository Receipts - Feeder Fund - International Stock Indices : S&P 500 Index (SPX), Dow Jones Industrial Average (INDU), NASDAQ Composite Index (CCMP), EURO STOXX 50 Price Eur (SX5E), FTSE 100 (UKX), Deutsche Borse AG German Stock Index DAX (DAX), Nikkei 225 (NKY, Tokyo Stock Exchange Tokyo Price Index TOPIX (TPX), Hong Kong Hang Seng Index (HSI).		
Unit V	**New Paradigms**	**11 Hours**
Structured Products - Alternate Investment Funds - Categories of AIF - Benefits of AIF - Algorithmic Trading - Introduction - Evolution of Algorithmic Trading - Benefits of Algorithmic Trading - Qualified Foreign Investors (QFIs) - KYC Registration Agency (KRA).		
Unit:6	**Contemporary Issues**	**2 Hours**
Webinars – Quiz - Online Assignments		
	Total Lecture Hours	**60 Hours**

Note: Question paper shall cover 100% theory.

Books for Study

1	VanitaTripathi & NeetiPanwar, "Investing in Stock Markets", Taxmann Publication, New Delhi, 2022.
2	**P.S. Balaram, & T. Sri Lakshmi,**" Stock Market Operations", Himalaya Publishing House, Mumbai, 2017.

Books for Reference

1.	"NISM-Series-V-B: Mutual Fund Foundation", National Institute of Securities Markets, Mumbai,2021.
2.	"NISM-Series-VII: Securities Operations and Risk Management", National Institute of Securities Markets, Mumbai,2021.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://nptel.ac.in/courses/110105121

Course Designed By: S.Arun Kumar / E-Mail ID: s_arunkumar@yahoo.com

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	M	S	S	S	S	S	M	S
CO2	S	M	S	S	M	S	S	S	S	M
CO3	S	M	S	S	S	S	S	S	S	S
CO4	M	M	S	S	S	S	S	S	S	S
CO5	M	M	S	S	S	S	M	S	S	S

*S - Strong; M - Medium; L – Low

Course Code	23C	GST & OTHER INDIRECT TAXATION	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in GST	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are to:
1.Acquire knowledge on Indian indirect tax system
2. Gain knowledge on GST and procedures.
3. Provide a practical perspective of GST Returns.
4.Identify and analyze online filling GST
5.Understand the Customs Act

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Gain knowledge on Indirect Tax system in India.	K1 & K2
2	Acquire knowledge on GST in India.	K2 & K5
3	Understand the registration procedure in GST	K2 & K6
4	Awareness of GST E return filling details.	K4 & K6
5	Understand the Customs Act in India.	K1 & K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	Concept of Indirect Tax	8 Hours

Indirect Taxes - Introduction - Features - Objectives of Taxation- Types of taxes- Direct and Indirect taxes - Indirect Tax Structure-Merits and Demerits of Indirect Taxes- Recent Developments in Indirect Taxes- Goods and Services Tax Act 2016 - Introduction – Features – Benefits of GST Act.

Unit:2	Basic of Goods And Service Tax	12 Hours

Goods and Service Tax - Important Definitions - Taxable Persons – Time of Supply of Goods and Services – Administrative set up – Classes of officers under Central and State goods and services Tax Act - Appointment of Officers – Powers of officers – Levy and collection of GST – Powers to grant exemption from tax.

Unit:3	GST- Registration	12 Hours

Registration – Procedure for registration under Schedule III – Special provisions relating to casual taxable person and non-resident taxable person – Amendment of registration – Cancellation of registration – Revocation of cancellation of registration.

Unit:4	GST-Filing of Returns	14 Hours

GST- Tax rate-e filing-GST portal – GSTR Forms - return producer-e way bill-composition scheme-Assessment of Non-filers of Returns – Assessment of Unregistered Persons – Assessment in certain Special Cases – Tax Invoice – Credit and Debit Notes – Payment of Tax – Tax Deducted at Source –Definitions - Collection of Tax at Source.

Unit:5	**Overview of Customs Duty**	**12 Hours**
Customs Act 1962 – Important Definitions – Basics – Importance of Customs Duty – Constitutional authority for levy of Customs Duty – Types of Customs Duty – Prohibition of Importation and Exportation of goods – Valuation of Goods for Customs Duty – Transaction Value – Assessable Value – Computation of Assessable Value and Customs		
Unit:6	**Contemporary Issues**	**2 Hours**
GST - Group Discussion & E- filing of Returns		
Note: Question Paper shall cover 100% Theory		
	Total Lecture Hours	**60 Hours**

Books for Study	
1	Mehrotra&Goyal, Indirect Taxes, SahityaBhavan Publications, Agra, 2015
2	V. Balachandran, “Indirect Taxation”, Sultan Chand & Sons and Kalyani Publishers, 2014
Books for Reference	
1	Dr. P. Radhakrishnan, “Indirect Taxation”, Kalyani Publishers, 2016.
2	Indirect Tax- GST- Custom Law- Dr.Parameshwaran&ViswanathanKavin Publishers, 2018
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	www.gst.gov.in
2	Cbic.gst.gov.in
3	www.gstcouncil.gov.in
4	https://youtu.be/l6c4khvDBVg
Course Designed By:Dr.M.Sivaprakasam / E-Mail ID: sivaprakash51990@gmail.com	

Mapping with Programme Outcomes										
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	M	S	S	S	S	M
CO2	S	S	S	S	S	S	S	S	S	M
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	23D	AI / ML FOR FINANCIAL SECTOR	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic knowledge on computer application and financial market	Syllabus Version	2023-24		

Course Objectives:

The main objectives of this course are to:

- To identify, formulate, and implement a machine learning project.
- To explore various applications of machine learning in all business aspects.
- To introduce the basic concepts, theories and state-of-the-art techniques of artificial intelligence.
- To introduce basic concepts and applications of machine learning.
- To help students to learn the application of machine learning /A.I algorithms in the different fields of science, medicine, finance etc.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the basic definition and need for machine learning	K2
2	Understand the core aspects behind any machine learning project	K2
3	Ability to implement a machine learning project	K4
4	Ability to identify potential applications of machine learning in real time	K5
5	Apply the machine learning concepts in real life problems	K3

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	Basics concepts of Machine Learning	12 Hours

ML Definition- Various kind of problems tackled using ML- Some standard learning tasks- Learning Stages- Learning Scenarios- Generalization- Data, Models and Learning- Parameter Estimation- Probabilistic Modelling and Inference- Directed Graphical Models- Setting up your working Environment- Supervised vs Unsupervised Learning- Cross Validation- Evaluation metrics.

Unit II	Advanced concepts of Machine Learning	12 Hours

Fundamentals of statistical learning theory- Convergence and learnability- Kullback-Leibler Information- Model selection and the bias variance trade-off- Cross-validation- Regularization- Generative vs Discriminative models- Neural Networks- The Perceptron- Feed-Forward Neural Networks- Back-propagation and stochastic gradient descent- Regularization and drop-out-Application to investment management.

Unit III	Supervised Learning	10 Hours

Linear Regression- Parametric Problems- Decision trees- Random forests- Classifications- K Nearest Neighbors- Support Vector- Naïve Bayes-.

Unit IV	Unsupervised Learning	12 Hours

Clustering- K-Means clustering- Dimensionality Reduction- Principle Component Analysis- Hierarchical Clustering- DBSCAN- Semi-supervised learning- Reinforcement Learning.

Unit V	Advanced Neural Networks	12 Hours

Convolutional Neural Networks- Recurrent Neural Networks- Long Short-Term Memory (LSTM)- Autoencoders- Applying Learning to Real problems- Image Classification & Segmentation- Scoring Opinion and Sentiments- Recommending Products and Movies- Bitcoin Prediction- Predicting from the Limit Order Book.

Unit:6	Contemporary Issues	2 Hours

Webinars – Quiz - Online Assignments

	Total Lecture Hours	60 Hours

Note: Question paper shall cover 100% theory.

Books for Study	
1	Mac Namee, B., D'Arcy, A., Kelleher, J. D. (2015). Fundamentals of Machine Learning for Predictive Data Analytics: Algorithms, Worked Examples, and Case Studies. United Kingdom: MIT Press
2	Artificial Intelligence and Intelligent Systems, by N P Padhy, Oxford University Press
3	Lopez de Prado, M. (2018). Advances in Financial Machine Learning. Germany: Wiley
4	Dixon, M. F., Halperin, I., Bilokon, P. A. (2020). Machine Learning in Finance: From Theory to Practice. Germany: Springer International Publishing
5	Mueller, J. P., Massaron, L. (2021). Machine Learning For Dummies. United States: Wiley
Books for Reference	
1	Guido, S., Müller, A. C. (2016). Introduction to Machine Learning with Python: A Guide for Data Scientists. United States: O'Reilly Media
2	Mueller, J. P., Massaron, L. (2021). Machine Learning For Dummies. United States: Wiley
3.	Cooper, S. (2018). Machine Learning for Beginners: An Introduction for Beginners, Why Machine Learning Matters Today and How Machine Learning Networks, Algorithms, Concepts and Neural Networks Really Work. (n.p.): Steven Cooper
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://www.kdnuggets.com/2020/03/trends-machine-learning-2020.html
2	https://mobidev.biz/blog/future-ai-machine-learning-trends-to-impact-business
3	https://venturebeat.com/2020/01/02/top-minds-in-machine-learning-predict-where-ai-is-going-in-2020/
Course Designed By: NSE ACADEMY LTD / E-Mail ID:	

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	M	M	M
CO2	L	L	L	M	M	M	M	M	M	M
CO3	M	M	M	M	M	M	M	M	M	M
CO4	M	S	M	S	M	M	S	S	M	M
CO5	M	M	M	M	M	M	M	M	M	M

*S - Strong; M - Medium; L - Low

Course code	23E	STRATEGIC FINANCIAL MANAGEMENT	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic knowledge on Fundamentals of Finance	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are to:

1. Familiarize the objectives, role and skills of financial manager required for Industry
2. Assess the factors affecting investment decisions
3. Provide an in depth view of financial leverage and theories
4. understand the dividend Theories
5. Learn the techniques of working capital Management techniques

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Relate and classify the objectives and role of financial managers with different industries.	K1&K2
2	Apply, analyse and determine the best investment proposal using capital budgeting technique.	K3,K4 &K5
3	Illustrate the capital structure theories.	K2
4	Choose and Analyse the dividend theories which are applied in Corporates.	K3&K4
5	Adapt working capital management techniques and solve the issues related to working capital.	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	Introduction to Financial Management	10 Hours

Nature, Scope and objectives of Financial Management – Industry 4.0 and Finance - Functions of Finance Manager – Role and changing roles of finance manager on account of Industry 4.0- Financial Decisions - Relationship between Risk and Return –Time Value of Money.

Unit:2	Cost of Capital and Capital Budgeting	10 Hours

Cost of Capital – Meaning and Importance – Cost of Debt, Preference, Equity and Retained Earnings – Weighted Average Cost of Capital – Capital Budgeting – Techniques – ROI, Payback Period and discounted cash flow

Unit:3	Capital Structure	12 Hours

Financial Leverage – Measures – EBIT, EPS Analysis – Operating Leverage –Financial - Business and Operating Risks – Theories of Capital Structure – Net Income Approach – Net – Operating Income Approach. MM Hypothesis – Determinants of Capital Structure.

Unit:4	Dividend Theories	14 Hours

Dividend Theories – Walter's Model – Gordon and MM‟s Models – Dividend Policy – Forms of Dividend – Determinants of Dividend Policy- Lintner’s Model on corporate dividend behaviour.

Unit:5	Working Capital Management	12 Hours

Management of Working Capital – Concept – Importance – Determinants and Computation of Working Capital – Management of Cash, Inventory and Receivables – Regulations of Bank Credit to industry - Credit Monitoring and Assessment (CMA) formats.

Unit:6	Contemporary Issues	2 Hours

Expert lectures -webinars-quiz-online assignments- case study

	Total Lecture hours	60 Hours

Note: Question Paper shall cover 60% Theory and 40% Problems	
Books for Study	
1	I.M. Pandey, "Financial Management", Vikas Publication, New Delhi, 2015
2	S.N Maheswari, "Financial Management", S.Chand& Sons Publisher, New Delhi, 2014
Books for Reference	
1	Prasanna Chandra, "Financial Management", Tata McGraw Hill Publishing Company Limited, UP, 2007
2	Khan & Jain, "Financial Management", Tata McGraw Hill Publishing Company Limited, UP, 2011
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://www.youtube.com/watch?v=RiAalxSm_Ek
2	https://www.youtube.com/watch?v=XxyvsB6sxDk
Course Designed By: Dr.M.Anbukarasi / / E-Mail ID: anbufeb14@yahoo.co.in	

Mapping with Programme Outcomes										
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	M	S	S	M	S	M	S	S
CO2	S	S	M	S	S	M	S	M	S	S
CO3	S	S	M	S	S	M	S	M	S	S
CO4	S	S	M	S	S	M	S	M	S	S
CO5	S	S	M	S	S	M	S	M	S	S

*S-Strong; M-Medium; L-Low

Course code	2EA	FINANCIAL DERIVATIVES	L	T	P	C
Elective			4	-	-	4
Pre-requisite		Fundamental knowledge in Stock Market	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are to:

1. Introduce the concept and types of derivatives, as well as the operations of the derivatives market in India.
2. Learn about forward contract and future contract, its differences and types of future contract.
3. Students to get extensive understanding in dealing with derivative instruments in the derivative market by familiarizing them with options and options pricing models.
4. Lay emphasis on swaps and evaluation of swaps.
5. Gain Knowledge on hedging process.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Learn and remember the basics of derivative markets and how they work in India.	K1
2	Enhance the knowledge on forward contract and various future contracts, able to differentiate forwards and futures.	K2 &K3
3	Understand various option strategies and create the option	K2 & K6
4	Get acquaintance on swaps and evaluation of swaps in derivate markets.	K1&K5
5	Understand the hedge management process, including how to create a hedging plan, as well as how to analyse and monitor your hedge position	K2, K6&K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Derivatives	8 Hours

Derivatives: Introduction – Meaning – History of derivatives market – Derivatives products in India - Market participants and their roles in the derivatives markets - Exchange-traded vs. OTC derivatives – Use of derivatives -Risk Involved in derivatives- Recent developments in Derivatives Market in India.

Unit:2	Forwards and Future Market	12 Hours

Forwards: Features of Forward contract - Limitations of forward markets - **Future Market** - Introduction to futures – Futures terminology - Key features of futures contracts - Distinction between futures and forwards contracts - Pay off for futures - Index Futures - Equity stock futures - Commodity Futures -Currency Futures – Interest Rate Futures - Physical settlement vs Cash settlement – Future Pricing.

Unit:3	Options and Option Pricing Model	10 Hours

Option: Introduction – Option Terminology – Type of Options - Call Option and Put Option – Option Style - American Option and European Option - Moneyness of Option Contract – Concept of Option Premium - Option Greeks – Option Payoff - Black-Scholes option pricing models – Option Strategies – Option Spread – Straddle – Strangle – Covered Call – Protective Put – Option contract in India – Index Option - Stock options - Commodities options - Currency Options – Interest Rate Option.

Unit:4	Swaps	14 Hours

Swaps: Meaning – Swap Terminology – Features of Swaps – Uses of Swaps –Types of Swaps - Interest Rate Swaps – Types of Interest Rate Swaps –Swaption - Currency Swaps –Commodity Swaps – Equity Swaps –Bond Swaps – Credit Default Swaps – International Swap Dealers Association (ISDA).

Unit:5	**Hedging**	**14 Hours**
Hedging: – Concepts – Perfect Hedging Model – Basic Long and Short Hedges – Cross Hedging — Hedging Objectives – Management of Hedge – Concept of Stock Index – Stock Index Futures – Stock Index Futures as a Portfolio management Tool – Speculation and Stock Index Futures – Stock Index Futures Trading in Indian Stock Market.		
Unit:6	**Contemporary Issues**	**2 Hours**
Expert lectures, online assignment – webinars		
	Total Lecture Hours	**60 Hours**

Note: Question paper shall cover 100% theory.

Books for Study

1	Raiyani ,Jagadish., "Financial Derivatives in India", Chennai, New Century Publication, 2011.
2	Gupta S.L, " Financial Derivatives: Theory, Concepts and Problems Hardcover", 2017

Books for Reference

1	NISM (2019), NISM Series VIIIA Equity Derivative Module, Delhi: Taxman
2	NCFM – Derivatives Market – Dealers Module, by NSE Academy, Mumbai

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://nptel.ac.in/courses/110/105/110105035
2	https://nptel.ac.in/courses/110/105/110105036

Course Designed By: S. Arun Kumar / E-Mail ID: s_arunkumar@yahoo.com

Mapping with Programme Outcomes

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	M	S	S	S	S	S	S	S
CO2	S	S	M	S	S	S	S	S	S	S
CO3	S	S	M	S	S	S	S	S	S	S
CO4	S	S	M	S	S	S	S	S	S	S
CO5	S	S	M	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	2EB	FIXED INCOME SECURITIES MARKETS	L	T	P	C
Elective			4	-	-	4
Pre-requisite		Basic Knowledge in Instruments	Syllabus Version	2023-24		

Course Objectives:

The main objectives of this course are to:

- To understand the fundamental features of debt instruments.
- To gain knowledge on bond market.
- To understand the concept of money market instruments.
- To learn repo rate and bond market indices
- To enrich the knowledge on wholesale debt market and sebi regulations.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the concepts and functions of debt market	K2
2	Evaluate and analyze the bond market	K5 & K4
3	Analyze the different type of money market instruments	K4
4	Understand the repo rate applicability and bond market indices	K2
5	Able to explain the debt market trading mechanism	K3

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	Indian Debt Markets	10 Hours

Basic concepts of debt instruments - Different types of products and participants - Secondary market for debt instruments.

Unit II	Central and State Government Bonds	13 Hours

Primary issuance process; Participants in Government bond markets; Constituent SGL accounts; Concept of Primary dealers, Satellite dealers; Secondary markets for Government bonds; Settlement of trades in G-Secs; Clearing corporation; Negotiated Dealing System; Liquidity Adjustment Facility (LAF). - Gross fiscal deficit of state Governments and its financing; Volume, Coupon rates and ownership pattern of State Government bonds

Unit III	Corporate Debt& Commercial Paper & Certificate of Deposits	12 Hours

Call Money Markets: Participants in the call markets; Call rates - Corporate Debt: Bond: Market segments; Issue process; Issue management and Book building; Terms of a Credit rating - Commercial Paper & Certificate of Deposits

Unit IV	Repos &Bond Market Indices and Benchmarks	12 Hours

Repos: Repo rate; Calculating settlement amounts in Repo transactions; Advantages of Repos; Recent; Issues in repo market in India; Secondary market transactions in Repos; Repo accounting. - Bond Market Indices and Benchmarks

Unit V	Trading Mechanism in the NSE-WDM & Regulatory	11 Hours

Description of the NSE WDM trading system; Order types and conditions; Order entry in negotiated trades market; Order validation and matching; Trade management; Reports; Settlement; Rates of Brokerage - G-Sec Act 2006; SEBI (Issue and Listing of Debt Securities) Regulations 2008 and Market Practices and Procedures

Unit:6	Contemporary Issues	2 Hours

Webinars – Quiz - Online Assignments

	Total Lecture Hours	60 Hours

Note: Question paper shall cover 100% theory.

Books for Study	
1	NSE Academy, NCFM -FIMMDA-NSE Debt Market (Basic) Module, Mumbai
Books for Reference	
1	The Handbook of Fixed Income Securities, by Frank Fabozzi, McGraw-Hill Education; 7th edition
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	
Course Designed By: NSE ACADEMY LTD / E-Mail ID:	

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	M	S	M	S	M	S	S
CO2	S	S	S	S	M	S	S	S	S	S
CO3	M	M	S	S	S	S	M	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S - Strong; M - Medium; L - Low

Third Semester

Course code	33A	DATA ANALYSIS THROUGH SPSS	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic ideas about Research and Knowledge of Statistics	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are:

1. To develop and understanding of the basic framework of the research process and various research designs and techniques
2. To identify the various sources of information for literature review and data collection
3. To impart knowledge for enabling students to develop data analytics skills and meaningful interpretation to the data sets so as to solve the business/Research problem
4. To write research reports and research proposal.

Expected Course Outcomes:

On the successful completion of the course, students will be able to:

1	Apply a range of quantitative and / or qualitative research techniques to business and management problems / issues	K1
2	Demonstrate knowledge and understanding of data analysis and interpretation in relation to the research process	K2 & K3
3	Develop necessary critical thinking skills in order to evaluate different research approaches utilized in the business / Industry	K4 & K5
4	Write the research report and research proposal	K5
5	Identify the overall process of designing a research study from its inception to report.	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	Introduction and Research Design	10 Hours

Business Research – Meaning – Scope and Significance – Utility of Business Research – Qualities of good researcher – Types of Research – Research Process – Identification, Selection and formulation of research problems – Hypothesis – Research design.

Unit:2	Sampling and Tools for Data Collection	10 Hours

Sampling – Methods and Techniques – Sample Size – Sampling Error – Fieldwork and Data Collection. Tools for Data Collection – Interview Schedule - Questionnaire – Observation, Interview and Mailed Questionnaire – Pilot Study and final Collection of Data.

Unit:3	Analyzing and Report Writing	12 Hours

Measurement and Scaling Techniques – Reliability and Validity Processing and Analysis of Data – Editing – Coding - Classification – Tabulation – Interpretations. Report Writing – Steps - Types of Reports.

Unit:4	Measuring the Relationship and Analyse the Impact	14 Hours

Measures of Central Tendency – Standard Deviation – Correlation - Simple, Partial and Multiple Correlation – Path Analysis – Auto Correlation – Regression Models – Ordinary Least Square Methods – Multiple Regression.

Unit:5	**Testing of Hypothesis**	**12 Hours**
Test of Significance –'t'Test - Large Sample and 'f' Test, Test of Significance for Attributes, Analysis of Variance (ANOVA) – Chi-square Test		
Unit:6	**Contemporary Issues**	**2 Hours**
Expert lectures, online seminars – webinars - SPSS		
	Total Lecture Hours	**60 Hours**
Note: Question Paper shall cover 60% Theory and 40% Problems		
Books for Study		
1	**Cooper (2019)**, "Business Research Method", Tata McGraw Hill Publishing Company Limited, Noida, UP.	
2	**S.P. Gupta (2019)**, "Statistical Methods", S.Chand& Sons Publisher, New Delhi.	
Books for Reference		
1	**J.K.Suchdeva (2020)**, "Business Research Methodology", Himalaya Publishing House, Mumbai.	
2	**R.S.N. Pillai & V. Bagavathi (2020)**, "Statistics", S.Chand& Sons Publisher, New Delhi.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://nptel.ac.in/courses/121/106/121106007/	
2	https://youtu.be/Ivk0SDrD4DM	
Course Designed By: Dr. P. Chellasamy / E-Mail ID: drchellamsamy@gmail.com		

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	M	S	S	S	M	S	S
CO2	S	S	S	M	S	S	S	M	S	M
CO3	S	S	S	S	S	S	S	M	M	M
CO4	S	S	S	S	S	S	S	S	M	S
CO5	S	S	S	S	S	S	S	S	M	M

*S-Strong; M-Medium; L-Low

Course code	33B	ADVANCED CORPORATE ACCOUNTING	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic knowledge in Accounting	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are to:

The students get a complete knowledge, concepts and procedures used to prepare the accounts of companies like, manufacturing company, bank, insurance, electricity and Holding Company.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	To get fundamental knowledge about Final Accounts of Companies, Managerial Remuneration and Profits Prior to Incorporation.	K3
2	To acquire knowledge in preparation of Holding Company Accounts	K3
3	To get familiarity about preparation of Bank and Insurance Company Accounts	K4
4	To understand preparation of the final accounts of electricity company accounts and disposal of surplus.	K5
5	To get knowledge about inflation accounting and IFRS.	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	Final Accounts of Companies	10 Hours

Final Accounts of Companies (Schedule VI): Preparation of Statement of Profit and Loss – Balance Sheet – Managerial Remuneration.

Unit:2	Holding Company Accounts	11 Hours

Holding Company Accounts: Meaning and definition of Holding Company and Subsidiary Company; Legal requirements relating to presentation of accounts - Consolidated financial statements; Preparation of Consolidated Balance Sheet; Steps involved in preparation of consolidation balance sheet.

Unit:3	Bank Accounts and Insurance Company	11 Hours

Bank Accounts: Business of banking companies – Legal requirements; Preparation of Profit and Loss Account and Balance Sheet - Insurance Company Accounts (New Format); types of insurance; Life insurance; Revenue account, Profit and loss account and balance sheet - General insurance (Fire and Marine); Revenue account, Profit and loss account and balance sheet.

Unit:4	Double Account System	13 Hours

Accounts of Electricity Companies: Features; Double accounts system Vs Single accounts system; Advantages and disadvantages – Preparation of Final Accounts – Revenue account – Net revenue account – Receipt and expenditure of capital account - Replacement of an Asset – Disposal of Surplus.

Unit:5	**Inflation Accounting**	**13 Hours**
Inflation Accounting: Methods of inflation accounting; Current purchase power method - Current cost accounting method – Hybrid method - International Accounting Standards – IFRS.		

Unit:6	**CONTEMPORARY ISSUES**	**2 Hours**
Expert lectures, online seminars - webinars		
	Total Lecture Hours	**60 Hours**

Note: Question Paper shall cover 20% Theory and 80% Problems

Books for Study

1	R.L.Gupta and M.Radhasamy, "Advanced Accountancy", Sultan Chand & Sons, New Delhi, 2001
2	M.C. Shukla , T.S.Grewal&S.Gupta, "Advanced Accounts", S. Chand & Sons, New Delhi, 2017

Books for Reference

1	Arulanandam& Raman, "Advanced Accountancy", Himalaya Publishing House, Mumbai, 2016
2	SP. Iyangar, "Advanced Accounting", Sultan Chand & Sons, New Delhi, 2008

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	-

Course Designed By: Dr.M.Jegadeeshwaran / E-Mail ID: drmjegadeesh@gmail.com

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	M	M	M
CO2	S	S	S	S	S	S	S	M	M	M
CO3	S	S	S	S	S	S	S	M	M	M
CO4	S	S	S	S	S	S	S	M	M	M
CO5	S	S	S	S	S	S	S	M	M	M

*S-Strong; M-Medium; L-Low

Course code	33C	ANALYTICS FOR FINANCE	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in Finance	Syllabus Version	2023-24		

Course Objectives:

The main objectives of this course are to:

- To gain understanding on the need and significance of Financial Analytics for various business requirements.
- To understand the Basic concepts of R
- To gain financial analytics knowledge using python
- To identify, formulate, and implement a Fintech project using R
- To prepare the project using Python.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Describe, define and apply the major components of the Financial Analytics and its importance in Fintech	K3
2	Learn and apply the financial analytics process in R	K2 & K3
3	Learn and apply the financial analytics process in Python	K2& K3
4	Learn and implement the applications of Financial Analytics using R	K3
5	Apply python concepts and practices to advanced financial analytics	K3

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	Financial Analytics	10 Hours

Introduction: Meaning-Importance of Financial Analytics Uses-Features-Documents used in Financial Analytics: Balance Sheet, Income Statement, Cash flow statement-Elements of Financial Health: Liquidity, Leverage, Profitability. Analysts: Role and Responsibilities Information and Knowledge-Methodology-Data-Required Competencies for the Analyst-Hypothesis Driven Methods-Data Mining with Target Variables-Explorative Methods-Business requirements.

Unit II	Financial Analytics with R	14 Hours

What is R and its application - Language features: functions, Assignment, Arguments and types. Financial Statistics: Concept and mathematical expectation - Probability - Mean; SD and Variance - Skewness and Kurtosis - Covariance and correlation - Capital Asset Pricing model. Financial Securities: Bond and Stock investments - Housing and Euro crisis - Securities Datasets and Visualization - Plotting multiple series. Time Series and Sharpe ratio: Examining and Stationary - Auto Regressive and integrated moving average Processes. Time periods and Annualizing - Ranking investment candidates - Sharpe Ratio for Income Statement growth.

Unit III	Financial Analytics with Python	12 Hours

Numbers in Python: Using type with different and creating an imaginary number - using numbers: using math operations and number formats. Python ingredients: Variables, names and objects - Numbers: Integers - Precedence - Bases - type. Conversion, Strings: Create coin Quotes-Reading Crossovers- Pairs trading- Financial Plots- Financial Data- Regression Analysis. Supervised Learning: Linear Regression- Ordinary Least Squares- Regularized Regression- Logistic Regression- K-Nearest Neighbors- Linear Discriminant Analysis- Classification and Regression Trees- Unsupervised Learning: Dimensionality Reduction- Clustering Techniques- k-means Clustering.

Unit IV	Financial Analytics Applications using R	12 Hours
Ganging the market Sentiment: Mark or Regime Switching model - Bayesian reasoning - Beta distribution. Stimulating Trading Strategies: Foreign exchange markets - Chart analytics - Initialization and finalization - Bayesian Reasoning within Positions. Prediction using fundamentals and binomial model for options: Best income statement Portfolio - obtaining Price Statistics - combining the income statement with Price statistics - Prediction using classification trees and Recursive Partitioning. Applying Computational finance - risk Neutral Pricing and No Arbitrage - High Risk - Free Rate Environment.		
Unit V	**Financial Analytics and Development using Python**	**10 Hours**
Excel Integration- Basic Spreadsheet Interaction- Scripting Excel with Python- Object Orientation and Graphical User Interfaces- Object Orientation- Basics of Python Classes- Simple Short Rate Class- Cash Flow Series Class- Graphical User Interfaces- Short Rate Class with GUI- Updating of Values- Cash Flow Series Class with GUI- Web Integration- Web Basics- Web Plotting- Static Plots- Interactive Plots- Real-Time Plots- Rapid Web Applications- Web Services.		
Unit:6	**Contemporary Issues**	**2 Hours**
Webinars – Quiz - Online Assignments		
	Total Lecture Hours	**60 Hours**

Note: Question paper shall cover 100% theory.

Books for Study

1	Financial Analytics with R _ Mark J. Bennets, Cambridge University Press
2	Introducing Python - OREILLY modern computing in simple packages - BILL LUBANOVIC - Shroff Publishers & Distributors Pvt. Ltd, Sep, 2015 , Mumbai
3	Beginning Python - Peter Norton Ctl, - WILEY - 2005 , New Delhi
4	Mac Namee, B., D'Arcy, A., Kelleher, J. D. (2015). Fundamentals of Machine Learning for Predictive Data Analytics: Algorithms, Worked Examples, and Case Studies. United Kingdom: MIT Press
5	Lopez de Prado, M. (2018). Advances in Financial Machine Learning. Germany: Wiley
6	Dixon, M. F., Halperin, I., Bilokon, P. A. (2020). Machine Learning in Finance: From Theory to Practice. Germany: Springer International Publishing

Books for Reference

1	Fundamentals of Business Analytics -R N Prasad,.SeemaAchavya,Wiley India PVT Ltd, New Delhi, P.No: 87-100, P.No:115-125 3
2	Naik, K. (2019). Hands-On Python for Finance: A Practical Guide to Implementing Financial Analysis Strategies Using Python. United Kingdom: Packt Publishing
3.	Molin, S. (2019). Hands-On Data Analysis with Pandas: Efficiently Perform Data Collection, Wrangling, Analysis, and Visualization Using Python. United Kingdom: Packt Publishing

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://towardsdatascience.com/python-for-finance-the-complete-beginners-guide-764276d74cef
2	https://pythonforfinance.net/
3	https://github.com/yhilpisch/py4fi
4	https://github.com/wilsonfreitas/awesome-quant
5	https://www.incworx.com/blog/sql-server-2020

Course Designed By: NSE ACADEMY LTD / E-Mail ID:

Mapping with Programme Outcomes										
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	M	M	M	M	L	M	M	M	M	S
CO2	M	M	S	S	S	S	S	S	M	M
CO3	M	M	S	M	S	S	S	S	M	M
CO4	S	M	S	S	M	M	M	M	M	M
CO5	L	M	M	S	L	L	L	S	M	M

*S - Strong; M - Medium; L - Low

Course code	33D	BLOCK CHAIN MANAGEMENT	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic Knowledge in Computer Applications	Syllabus Version	2023-24		

Course Objectives:

The main objectives of this course are to:

- To give an overview on block chain technology
- To gain knowledge on Bit coin and network structure
- Familiarize with crypto currencies.
- To learn the technical challenges in Block chain technology.
- To develop & integrate ideas from various domains and implement the technology in different perspectives

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Learn the basic concepts of distributed systems and structure of Block chain	K2
2	Gain insights on Bitcoin and understand the mechanics of Bitcoin transactions	K2
3	Know the importance of various crypto currencies	K2
4	Understand Blockchain Learning and its application for various Business Models	K2
5	Analyze the Blockchain Solutions and understand the idea of Blockchain Society	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	Overview of Block Chain	10 Hours

A Payment System- Two types of Software Architecture- Advantages of Distributed Systems- Disadvantages of Distributed Systems- Mixing Centralized and Distributed Systems- Purpose of Blockchain- Layers of Blockchain- Blockchain Uses and Use Cases- Laying the Blockchain Foundation- Cryptography- The Structure of Blockchains- Blockchain Applications- The Blockchain Life Cycle- Blockchains in Use.

Unit II	Overview of Bitcoins	12 Hours

History of Money- Dawn of Bitcoin- Bitcoin Definition- Working with Bitcoins- The Bitcoin Blockchain- Block Structure- Merkle Tree- The Genesis Block- The Bitcoin Network- Network Discovery for a New Node- Bitcoin Transactions- Consensus and Block Mining- Block Propagation- Bitcoin Scripts- Bitcoin Wallets.

Unit III	Block Chain 1.0, 2.0 and 3.0	14 Hours

Blockchain 1.0: Currency- How a Cryptocurrency Works- Blockchain 1.0 in Practical Use- Blockchain 2.0: Contracts- Financial Services- Crowd funding- Bitcoin Prediction Markets- Smart Property- Smart Contracts- Blockchain 2.0 Protocol Projects- Ethereum: Turing Complete Virtual Machine- Automatic Markets and Trade nets- The Blockchain as a Path to Artificial Intelligence- Blockchain 3.0: Applications Beyond Currency, Economics, and Markets- Blockchain Science: Grid coin, Folding coin.

Unit IV	Impacts of Block Chain	12 Hours

Blockchain Learning: Bitcoin MOOCs and Smart Contract Literacy- Learn coin- Currency, Token, Tokenizing- Community coin- Campus coin- Currency Multiplicity-Demurrage Currencies- Technical Challenges- Business Model Challenges- Scandals and Public Perception- Government Regulation- Privacy Challenges for Personal Records- Blockchain Genomics- Blockchain Health.

Unit V	The Real Business of Blockchain	10 Hours
Blockchain Inspired Solution- Business Currencies with Blockchain Inspired Solution- Blockchain complete solution- Seeking Value Consorting with the Enemy- Game on for Tokenization- Embracing Consensus through Decentralization- Market Access and Participation- Enhanced Blockchain Solutions- Unleashing the Power of Smart Things- The Blockchain Organization- The Blockchain Society.		
Unit:6	**Contemporary Issues**	**2 Hours**
Webinars – Quiz - Online Assignments		
	Total Lecture Hours	**60 Hours**

Note: Question Paper shall cover 100% theory.

Books for Study

1	Block chain Basics: A Non-Technical Introduction in 25 Steps, Daniel Drescher, Apress Publishers,2017
2	Dhameja, G., Singhal, B., Panda, P. S. (2018). Beginning Blockchain: A Beginner's Guide to Building Blockchain Solutions. Germany: Apress
3	Swan, M. (2015). Blockchain: Blueprint for a New Economy. United States: O'Reilly Media
4	Uzureau, C., Furlonger, D. (n.d.). The Real Business of Blockchain: How Leaders Can Create Value in a New Digital Age. United States: Harvard Business Review Press

Books for Reference

1	Daniel Drescher, “Block Chain Basics”, Apress; 1stedition, 2017
2	Anshul Kaushik, “Block Chain and Crypto Currencies”, Khanna Publishing House, Delhi
3.	Imran Bashir, “Mastering Block Chain: Distributed Ledger Technology, Decentralization and Smart Contracts Explained”, Packt Publishing, first edition – 2012

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://www.blockchain.com/learning-portal/bitcoin-faq
2	https://www.bitdegree.org/crypto/tutorials/blockchain-explained
3	https://link.springer.com/article/10.1007/s00287-020-01246-7

Course Designed By: NSE ACADEMY LTD / E-Mail ID:

Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	L	L	L	S	S	S	S	M	S
CO2	M	M	M	M	S	S	S	S	M	S
CO3	M	M	M	M	S	S	S	S	M	S
CO4	M	M	M	M	S	S	S	S	M	S
CO5	S	S	S	S	S	S	S	S	M	S

*S - Strong; M - Medium; L - Low

Course Code	33E	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basic knowledge in Investment Management	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are to:

1. Become familiar with various Investment avenues, Portfolio Construction as well as the risk and return associated with various stock.
2. Acquire a thorough knowledge in valuation models.
3. Learn about long-term and short-term investment analysis tools.
4. Familiarize with Portfolio theories.
5. Gain knowledge in Portfolio performance and risk adjusted methods.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Remember and comprehend the various investing options, how to structure a portfolio and the risks and rewards associated with each options.	K1 & K2
2	Understand the Equity Shares, Preference Shares and Bonds valuation	K2
3	Construct a portfolio using fundamental and Technical analysis	K6
4	Understand and apply the Portfolio Theories in portfolio construction.	K2 & K3
5	Evaluate the portfolio performance and able to make the necessary changes in portfolio.	K5 & K3

K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create

Unit:1	Investment Management	15 Hours

Investment – Meaning – Nature and scope of Investment – Investment vs Speculation – Type of Investors – Investment Avenues – Factors influencing the investment choice – Portfolio Management: Meaning and significance, Active vs. Passive portfolio management - Strategic vs. Tactical asset allocation - Factors Affecting Investment Decisions in Portfolio Management - Risk: Definition - Systematic versus Non-systematic Risk - Measurement of Risk - Risk and Expected Return - Risk-Return Relationship of different stock - Portfolio and Security Returns - Return and Risk of Portfolio - Portfolio Diversification and Risk.

Unit:2	Valuation of Equity, Preference Shares & Bonds	10 Hours

Bond: Introduction – Reasons for issuing Bonds – Bond Features – Types of Bonds – Determinants of bond safety -Bonds Prices, Yields and Interest Rates –Measuring Price Volatility of Bonds-Macaulay Duration and Modified duration. Preference Shares: Introduction – Features of Preference shares – Preference Shares Yield – Holding Period Return – Yield to Call - Concept of Present Value - Equity Share Valuation Model.

Unit:3	Fundamental & Technical Analysis	13 Hours

Fundamental Analysis: Objectives - Economic Analysis – Industry Analysis – Company Analysis - Technical Analysis: Meaning of Technical Analysis – Assumptions – Pros and cons of technical analysis - Difference between technical analysis and fundamental analysis – Dow Theory - Types of Charts – Chart Patterns - Trend Analysis – Support Line and Resistance Line - Volume Analysis - Indicators and Oscillators – Simple Moving Average – Exponential Moving Average – Relative strength Index – Bollinger Band – Elliott wave theory.

Unit:4	**Portfolio Theories**	**10Hours**
Efficient Market Hypothesis - Markowitz Model, Arbitrage Pricing Theory - Sharpe's Single index portfolio selection method - Capital Asset Pricing Model (CAPM).		
Unit:5	**Portfolio Performance Evaluation and Revision**	**10 Hours**
Portfolio Performance Evaluation - Meaning - Need for Evaluation - Methods of calculating Portfolio return - Sharpe's Ratio - Treynor's Ratio - Jensen's Differential Returns - Portfolio Revision - Need for Portfolio Revision - Formula Plans.		
Unit:6	**Contemporary Issues**	**2 Hours**
Expert lectures, online seminars – webinars – Class with live charts		
	Total Lecture Hours	**60 Hours**

Note: Question Paper shall cover 70% Theory 30% Problem

Books for Study

1	Kevin., S "Security Analysis and Portfolio Management" New Delhi, PHI Learning Pvt Ltd, 2015.
2	Chandra, Prasanna, "Investment Analysis and Portfolio Management", New Delhi, Tata McGraw Hill Publishing Company Ltd, 2017.
3	Bhalla V.K., "Investment Management" New Delhi, S. Chand& Co Ltd, 2019.
4	Ranganathan M. and Madhumathi R., Security Analysis and Portfolio Management, Pearson, 2012 (2/e).

Books for Reference

1	Avadhani, V.A., "Security Analysis and Portfolio Management", Mumbai, Himalaya Publishing House,2016
2	Punithavathy Pandian, "Security Analysis and Portfolio Management", New Delhi,Vikas Publishing House Pvt Ltd, 2013
3	Fischer D. E., Security Analysis and Portfolio Management, Pearson education, 1995.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://archive.nptel.ac.in/courses/110/105/110105035/
2	https://archive.nptel.ac.in/courses/110/107/110107154/

Course Designed By: S. Arun Kumar / E-Mail ID: s_arunkumar@yahoo.com

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	M	S	S	S	M	S	S
CO2	S	S	S	M	S	S	S	S	S	M
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	M	S	S
CO5	S	S	S	S	S	S	M	M	M	M

*S-Strong; M-Medium; L-Low

Course code	3EA	FINANCIAL MODELING	L	T	P	C
Core			4	-	-	4
Pre-requisite		Basics of python, MS excel	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are to:

1. To make the students understand how Financial models are used to estimate the valuation of a business
2. To apply knowledge and understanding of financial statements
3. To learn to compare businesses to their peers in the industry through various models.
4. To understand how financial models are used in strategic planning to test various scenarios, calculate the cost of new projects, decide on budgets, and allocate corporate resources.
5. To build valuation models using different methods

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Learn the basic concepts of modelling and its perspective in analysis and auditing.	K1 & K2
2	Gain insights on Financial Statement and forecasting various finance parameters	K4
3	Develop a financial model suitable that aids management and documentation	K3,K4, K6
4	Understand potential applications of Finance Models and its implementation	K2
5	Practice and implement Financial modelling in Python Environment.	K3 & K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit I	Principles of Modelling	10 Hours

A Good Model- Model Design- Selection of Model Variables and their Dependencies- Level of Detail or Aggregation- Model Structure and Planning- Model Building- Results Presentation and Other Uses of Sensitivity Analysis- Model Auditing.

Unit II	Financial Statement, Cash Flow and Valuation Modelling	14 Hours

Financial Statement Modelling: Core Points and Example- Income Statement Forecasting- Sales Forecasts- Cost Forecasts- Operating Profit- Taxable Profit, Tax and Net Income- Dividends and Retained Earnings Balance Sheet Forecasting- Error Checks and Feasibility Checks- Cash Flow Statement Forecasting- Cash Flow Valuation.

Unit III	Developing Financial Models	10 Hours

Financial Modelling- Basics of Design- Design process and method- Menu structure- Management reports and summaries- Development- Testing and auditing- Protection as an application- Documentation- Features and techniques - Data validation- Controls- Graphics- Sample model planning- Example model.

Unit IV	Applications of Financial Modeling	12 Hours

Analyzing performance- Forecasting models- Portfolio analysis- Cost of capital- Bonds- Investment analysis- Risk- Depreciation- Leasing- Company valuation- Optimization- Decision trees- Risk management- Modeling checklist.

Unit V	Financial Modeling in Python	12 Hours

Welcome to Python- PPF package- Basic Mathematical Tools- Data Model- Timeline- The Hull White Model- Pricing using Numerical Methods- Pricing Financial Structures in Hull White-Python Excel Integration.

Unit:6	**Contemporary Issues**	**2 Hours**
Expert lectures -webinars-quiz-online assignments- case study		
	Total Lecture hours	**60 Hours**

Note: Question Paper shall cover 100% Theory

Books for Study

1	Rees, M. (2015). Financial Modelling in Practice: A Concise Guide for Intermediate and Advanced Level. United Kingdom: Wiley.
2	Day, A. (2012). Mastering Financial Modelling in Microsoft Excel 3rd Edn: A Practitioner's Guide to Applied Corporate Finance. United Kingdom: Pearson Education Limited.
3	Gardner, C., Fletcher, S. (2010). Financial Modelling in Python. Germany: Wiley.

Books for Reference

1	Mastering Financial Modelling In Microsoft Excel: A Practitioner'S Guide To Applied Corporate Finance, 2/E. (2008). India: Pearson Education.
2	Benninga, S. Z., Benninga, D. F. o. M. S., Benninga, S., Czaczkes, B. (2000). Financial Modeling. United Kingdom: MIT Press.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://corporatefinanceinstitute.com/resources/knowledge/modeling/types-of-financial-models
2	https://www.wallstreetprep.com/knowledge/financial-modeling-best-practices-and-conventions/
3	https://www.ey.com/en_nl/finance-navigator/the-ultimate-guide-to-financial-modeling-for-startups

Course Designed By: NSE ACADEMY LTD / E-Mail ID:

Mapping with Programme Outcomes

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	L	M	M	M	M	M	M	M	M	M
CO2	S	M	S	S	S	S	S	S	S	S
CO3	S	M	S	S	S	S	S	S	S	S
CO4	L	M	M	M	M	S	S	S	M	M
CO5	S	M	S	S	S	S	S	S	S	M

*S-Strong; M-Medium; L-Low

Course code	3EB	INTERNET OF THINGS	L	T	P	C
Elective			4	-	-	4
Prerequisite		Basic Knowledge in Technology	Syllabus Version		2023-24	

Course Objectives:

The main objectives of this course are to:

1. Teach the students about a new technology called “Internet of Things”.
2. Make the students acquainted with Internet of Things Architecture.
3. Gain the idea of Internet of Things applications in various fields.
4. Know about the Internet of Things Devices.
5. Gain Knowledge in the Web of Things.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Remember the basic idea about the Internet of Things.	K1
2	Understand the design and structure of the Internet of Things.	K2
3	Grasp the idea of how the Internet of things applied in various fields.	K2
4	Identify and use the available Internet of Things devices.	K2
5	Remember the Concept of the Web of Things and how it differs from the Internet of Things.	K1

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	IoT OVERVIEW	11 Hours

Internet of Things - How does the Internet of Things (IoT) Work? - Features of IOT Advantages and Disadvantages of (IoT) - Embedded Devices (System) in (IoT) - Embedded System Hardware- Embedded System Software - IoT Ecosystem - IoT Decision Framework.

Unit:2	IoT ARCHITECTURE	10 Hours

IoT Architecture- Components of IoT Architecture- Stages of IoT Solutions Architecture- IoT Energy Domain- IoT Biometrics Domain.

Unit:3	IoT APPLICATION	11 Hours

IoT in Smart Home and Smart City Application- IoT Smart Agriculture Domain- IoT - Healthcare- Internet of Things (IoT) in Transportation - Internet of Things (IoT) in Manufacturing - Internet of Things (IoT) in Education - Internet of Things (IoT) in Law enforcement - Internet of Things (IoT) in Sales force - Internet of Things (IoT) in Identity Protection.

Unit:4	IoT DEVICES	13 Hours

IoT in Transforming Businesses - Smart Objects in IoT - IoT Devices - Major IoT Boards in Market - IoT - Platform- Thing Work in Internet of Things - IoT Data Link Communication Protocol- IoT Network Layer Protocols - IoT Session Layer Protocols.

Unit:5	**WEB OF THINGS**	**13 Hours**
1. Web Of Things: Web of Things Vs Internet of Things – Web of Things Pillars – Architecture Standardization for WoT: Platform Middleware for WoT – Unified Multi Tier WoT Architecture – WoT Portals and Business Intelligence.		
Unit:6	**Contemporary Issues**	**2 Hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture Hours	**60 Hours**
Note: Question paper shall cover 100% theory.		
Books for Study		
1	Arsheep Bahga, Vijay Madisetti, "Internet Of Things: A Hands-On Approach", Orient Blackswan Private Limited - New Delhi,2015.	
2	Lele, Chitra, "Internet of Things (IoT) A Quick Start Guide", BPB Publications, New Delhi, 2022.	
Books for Reference		
1	Greengard, Samuel., "The Internet of Things, revised and updated edition (The MIT Press Essential Knowledge series)", MIT Press, Cambridge, 2021.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	https://www.javatpoint.com/iot-internet-of-things	
Course Designed By: Dr.M.Nirmala / E-Mail ID: nimmiswetha@gmail.com		

Mapping with Programme Outcomes										
Cos	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	S	S	S	S	S	M	S	S	M	S
CO2	S	S	S	S	S	S	M	S	S	M
CO3	S	S	S	S	S	S	M	S	S	S
CO4	S	S	S	S	S	S	S	S	S	M
CO5	M	S	S	S	S	S	M	S	M	S

*S-Strong; M-Medium; L-Low

Value Added Course

VALUE ADDED COURSE - I

CREDIT ANALYST		
Name of the Department	**COMMERCE**	
Name of the Faculty Member i/c With Complete Address with Phone and e-mail	**Dr.P.CHELLASAMY** Professor, Department of Commerce Bharathiar University, Coimbatore - 641046 drchellamsamy@gmail.com Mobile : 9443349179	
Inter / Intra Department Course	**Intra Department Course**	
Duration of the Course	**40 Hours**	
Eligibility	**Knowledge in Accounting**	
Number of Candidates to be Admitted	-	
Registration Procedure	-	
Job Opportunities:		
Financial analysts		
Credit managers		
Credit Rating analyst		
The objectives of the Course are:		
The main objectives of this course are to:		
1	To acquire the practical skill of data analysis	
2	Train them with critical thinking and communication skill to become a Financial Analysts	
3	Learn the role of credit manager	
4	Learn the investment opportunities	
5	Acquire an understanding of credit rating	
Course Content	Lecture (Online)	
Module 1	A Brief Introduction- Banking Credit Analysis Process	**4 Hours**
Module 2	Fundamental Financial Math- Commercial Credit Analysis	**4 Hours**
Module 3	Finance Training	**4 Hours**
Module 4	Excel Crash Course: Master Excel for Financial Analysis	**4 Hours**
Module 5	Risk Management	**4 Hours**
Module 6	Risk Management Process - Analysis	**4 Hours**
Module 7	Financial Management A Complete Study for CA/CMA/CS/CFA/ACCA	**4 Hours**
Module 8	Career Hacking- Resume, LinkedIn, Interviewing	**4 Hours**
Module 9	Essential of Soft Skills	**4 Hours**
Module 10	Assignment	**4 Hours**
Books for Study		
1	Blokdyk. Gerardus "**Credit Analyst**", Create Space Independent Publishing Platform, 2018	
Books for Reference		
1	Arnold Ziegel, Ronna Ziegel, **Fundamentals of Credit and Credit Analysis: Corporate Credit Analysis**, Create Space Independent Publishing Platform, 2015	
Related Online Contents		
-		

VALUE ADDED COURSE - II

DIGITAL MARKETING		
Name of the Department	**COMMERCE**	
Name of the Faculty Member i/c With Complete Address with Phone and e-mail	**Dr. M. SUMATHY** Professor & Head **Dr.M.NIRMALA** Assistant Professor, Department of Commerce Bharathiar University, Coimbatore-46 Mobile : 9487430218	
Inter / Intra Department Course	**Intra**	
Duration of the Course	**40 Hours**	
Eligibility	**Basic knowledge in Marketing**	
Number of Candidates to be Admitted	**-**	
Registration Procedure	**-**	
Job Opportunities:		
• Digital Marketing Manager • Content Writers • Inbound Marketing Manager • Social Media Marketing Experts/Specialists • Search Engine Marketers		
The objectives of the Course are:		
The main objectives of this course are to:		
1	Learn the basic concepts in Digital marketing	
2	Create a website	
3	Gain knowledge in CRM	
4	Manage social media effectively	
5	Learn the marketing strategy	
Course Content	Lecture / Practical / Project / Internship	
Module 1	Digital Marketing Fundamentals	**4 Hours**
Module 2	Digital Marketing Campaign - Understanding the Types of Campaigns.	**4 Hours**
Module 3	E-mail Marketing	**4 Hours**
Module 4	Building a Website - Hosting a Website	**4 Hours**
Module 5	Customer Relationship Management (CRM)	**4 Hours**
Module 6	Managing Social Media	**4 Hours**
Module 7	Leadership skills for digital marketing professionals	**4 Hours**
Module 8	Internet marketing strategy	**4 Hours**
Module 9	Assignments	**4 Hours**
Module 10	Case studies	**4 Hours**
Books for Study		
1	Pineet Singh Bhatia , Fundamentals of Digital Marketing", Pearson Publishers, 2019.	
Books for Reference		
1	Deiss, R., & Henneberry, R, Digital marketing for dummies. John Wiley & Sons, 2020 - 21	
Related Online Contents		
1	Basics of Digital Marketing - SWAYAM	

Supportive Course

Course code		PRINCIPLES OF ACCOUNTING	L	T	P	C
Core/Elective/Supportive		Supportive paper - I	2			2
Pre-requisite		Basic Knowledge in Accounting	Syllabus Version			2023-24

Course Objectives:

The main objectives of this course are to:

1. Acquaint students with the principles of accounting
2. Gain knowledge on final accounts
3. Learn the Methods of depreciation

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Acquire knowledge on Accounting Concepts	K1
2	Able to prepare the final accounts.	K5
3	Evaluate methods of Depreciation	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	Basic Concepts of Accounting	10- hours

Meaning and Scope of Accounting - Accounting and Concepts - Journalizing Transactions.

Unit:2	Process of Final Accounts	10- hours

Subdivision of Journal - Ledger Posting - Trial Balancing - Bank Reconciliation Statement- Final Accounts (Simple Adjustments).

Unit:3	Depreciation and Types	10- hours

Depreciation - Meanings - Features - Causes - Needs - Factors Affecting Depreciation - Methods of Calculating Depreciation (Straight Line & Written Down Value Methods only).

	Total Lecture hours	30- hours

Note: Question paper shall cover 40% theory and 60% Problems.

Text Book(s)

1	T.S Reddy &A,Murthy "Advanced Accountancy " Margham Publications, Chennai, 2015
2	N.Vinayagan, K.L.Mani and K.L.Natarajan "Principles of Accountancy". S.Chand& Co. Limited , New Delhi, 2010

Reference Books

1	S.K. Battacharyya, "Accounting for Management", Vikas Publication, New Delhi, 1997

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://youtu.be/9Quvow8Cnk
2	https://youtu.be/Qvp3Kbb3SGM

Course Designed By: Dr.M.Sivaprakasam / E-Mail ID: sivaprakash51990@gmail.com

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	M	S	S	S	S	S	S
CO2	S	S	S	S	S	M	S	S	S	M
CO3	M	S	S	S	L	S	S	S	M	S

*S-Strong; M-Medium; L-Low

Course code		PRINCIPLES OF MODERN BANKING	L	T	P	C
Core/Elective/Supportive		Supportive paper - II	2			2
Pre-requisite		Basic Knowledge in Banking Practices	Syllabus Version			2023-24

Course Objectives:

The main objectives of this course are to:

1. Acquaint with the banking practices of central bank of India
2. Understand the adoption of information technology in banking
3. Learn the electronic Payment Systems

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Know the Indian banking system, functions of central bank and its contribution to the Indian economy	K2
2	Explore the financial services provided through e-banking and how the banking risks are managed	K3
3	Apply the electronic Payment Systems	K3

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** - Create

Unit:1	Introduction of Banking	10- hours

Banking System – Role of Banks in Economic Development – Central Bank – Functions.

Unit:2	Electronic Banking	10- hours

E–Banking - Risk Management for E–Banking – Benefits of E-Banking – Drawbacks of E–Banking – Mobile Banking – Telephone Banking, Online Banking – ATM – Mechanism – Functions – Importance – Electronic Funds Transfer.

Unit:3	Electronic Payment System	10- hours

Overview of domestic Payment systems – Role of RBI in e-payments - NCPI – Meaning – Role and Responsibilities of NCPI – UPI- RuPay- CTS –IMPS– NACH- Bharat Bill Pay – AePS – Cyber Security.

	Total Lecture hours	30- hours

Note: Question paper shall cover 100% theory.

Text Book(s)

1	Dr.S.Gurusamy, "Banking Theory Law and Practice" Vijay Nicols Imprints Private Limited, Chennai, 2010
2	S.Natarajan& R. Parameshwaran, "Indian Banking" S.Chand& Co. Limited,New Delhi,2010

Reference Books

1	Muraleedhran, "Modern Banking Theory and Practice", PHI Learning Pvt Ltd, New Delhi, 2014

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://www.npci.org.in/
3	https://www.rbi.org.in/scripts/PaymentSystems_UM.aspx
4	**https://www.youtube.com/watch?v=p4ijheEb2cg**

Course Designed By: S.Arun Kumar / E-Mail ID: s_arunkumar@yahoo.com

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	M	M	S	S	S	S	S	S
CO2	S	S	S	S	S	M	S	S	S	M
CO3	M	S	S	S	L	S	S	S	M	S

*S-Strong; M-Medium; L-Low

Annexure

M.Com (Financial Technology)

Program Code:

Syllabus
(With effect from 2023 - 24)

DEPARTMENT OF COMMERCE
Bharathiar University
(A State University, Accredited with "A" Grade by NAAC and
13th Rank among Indian Universities by MHRD-NIRF)
Coimbatore - 641 046, India

BHARATHIAR UNIVERSITY: COIMBATORE 641046
DEPARTMENT OF COMMERCE

MISSION

- To impart social consciousness among students
- To Provide value based education for enhancing employability skills in the area of Finance and Accounting.
- To Train the students with innovative leadership qualities
- To impart quality higher education to excel in their life.
- To provide students with better research platform

ELIGIBILITY FOR ADMISSION TO THE COURSE

- Any UG degree in Commerce, Management, Computer Science, Computer Applications, Information Technology and Mathematics.

DURATION OF THE COURSE

- The course shall extend over a period of two years comprising four Semesters, with two Semesters per year. There shall not be less than ninety instructional days for each semester. Examination shall be conducted at the end of each semester for the respective subjects.

COURSE OF STUDY AND SCHEME OF EXAMINATION

- The course of study and scheme of examination for the M.Com (Financial Technology) course
- Shall consist of the following:

Model Question Paper Pattern for Core and Elective Papers

Time: 3 Hours Maximum Marks: 75 Marks.

Section A – (10 x 1 = 10)

Answer All the questions
Each question carries **One** mark
Q. No.1. – Q. No. 10 - Objective questions with four multiple choices

Section B – (5 x 5 = 25)

Answer All the questions
Each question carries **Five** Marks
Q. No. 11 – Q. No. 15 - Questions with internal choices (either (a) or (b) type

Section C – (5 x 8 = 40)

Answer all the questions
Each question carries **Eight** Marks
Q.No. 16 – Q.No. 20 - Questions with internal choices (either (a) or (b) type)

****

Model Question Paper Pattern for Supportive Paper

Time: Two Hours Maximum Marks: 38 Marks

Section A – (5 x 1 = 5)

Answer all the questions
Each question carries One Marks
Q. No. 1 – Q. No. 5

Section B – (5 x 3 = 15)

Answer all the questions
Each question carries Three Marks
Q. No. 6 – Q. No. 10 - Questions with internal choices (either (a) or (b) type

Section C – (3 x 6 = 18)

Answer all the questions
Each question carries Six Marks
Q.No. 11 – Q.No. 13 - Questions with internal choices (either (a) or (b) type)

****