AC - 07/07/2023 Item No. - 6.35 (N)

As Per NEP 2020



Preamble

1) Introduction:

The finance sector and companies have expanded at rapidly since liberalization and globalization of Indian economy. The emerging role of FinTech, innovative financial instruments, changes in the banking and capital markets are redefining the context of financial services and finance operations.

Hence, there is a growing need to narrow the gap between industry-relevant knowledge and academic education in finance domain The M.Sc. (Finance) program brings together the latest market development in the finance industry and combines them in curriculum structure for a classroom training and learning process so as to extend in-depth understanding various aspects of problems and financial decision-making with high industry application relevance. The program introduces the learners to a broad range of courses relevant for financial decision making and the financial markets.

2) Aims and Objectives

The broad aims of the program are following: The learners of M.Sc. (Finance) program should be able to understand and master core concepts and methods in the finance discipline and its application in business practice. Using financial techniques and methods they should be able to function effectively in diverse business contexts. Using the understanding of finance, they should be able to communicate effectively in financial business settings and negotiations.

The broad objectives of M.Sc. (Finance) program are:

- To build capabilities in learners for applying core concepts and tools in the finance discipline to develop innovative strategies for addressing current and emerging business problems.
- To enhance capabilities of learners to integrate and apply key analytical methods from finance domain to solve current and emerging business problems.
- To expand capabilities of learners to assess financial aspects of local and global business contexts and use this assessment as input to the current and emerging business decisions.

3) Learning Outcomes

- PO1 Students will be able to understand the fundamental financial concepts like time value of money, risk-expected return tradeoffs, Fintech, and others.
- PO2 Students will be able to apply and critically evaluate theories of financial statements and related analysis
- PO3 Students will be able to build basic knowledge of the financial institutional in context of financial decisions and transactions such institutions undertake.
- PO4 Students will be able to apply and critically evaluate corporate finance techniques
- PO5 Students will be able to infer the impact of economics and factors, business decisions, etc., on a firm's performance.
- PO6 Students will be able to engage and work effectively in groups and use team experiences and propose strategies for future improvement.
- PO7 Students will be able to identify, define and analyze problems and identify and create process to solve them
- PO8 Students will be able to exercise critical judgement in creating new understanding
- PO9 Students will be able to demonstrate advanced numeracy and quantitative skills
- PO 10 Students will be able to identify and evaluate social, cultural, global, ethical responsibilities and issues

4) Any other point (if any) – Nil

5) Baskets of Electives -

Semester	Electives
	Effective Communication
	(OR)
	Basic Quantitative Methods
	(OR)
	Basic Computing
	(OR)
	Basic Accounting
	(OR)
	Basic Economics
11	Corporate Governance & Regulatory Environment
	(OR)
	AI and Data Science Techniques for Financial Decision making
	(OR)
	Actuarial Science
111	Infrastructure and Project Finance
	(OR)
	Mutual Fund
	(OR)
	Entrepreneurial Finance, Venture Capital and Private Equity
IV	Emerging Trends in Environmental Accounting and Finance
	(OR)
	Wealth Management
	(OR)
	Trading Strategies and Financial Models

6) Credit Structure of the Program (Table as per NEP Format with sign of HOD and Dean)

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Credit Structure

Year	Lev	Se		Majo	or		RM	OJT/FP	R	Cu	Degr
	el	m	Manda	atory		Electives (one)			P	m. Cr.	ee
			4*2+2	2*3		4	4	-	-	22	
			Economic s	TH	2	Effective Communic	Research Methodol				PG
(MSc - Finan ce)	6.0	Se m I	Quantitati ve Methods Emerging Technolo	TH	22	ation (OR) Basic Quantitativ e Methods	ogy				Diplo ma (after 3 Years
1			gies in Finance – Block chain, Bitcoin			(OR) Basic Computing (OR) Basic					Degre e)

	and Fintech Financial Managem ent Accountin g and Financial Reporting	TH TH+ PR	4	Accounting (OR) Basic Economics				
	۷*٫٫۲	2*3		Δ		O.IT/FP	-	22
	Financial Modelling	TH+	2	Corporate	-	OJT / Field		<i>LL</i>
	Economet	TH	2	e & Regulatorv		Project		
	Financial Markets and	TH	2	Environme nt (OR)		Financi al Training /		
S n	e S N Behaviora	тн	4	Science		Awaren ess		
	I Economic s and Algorithmi c Finance		7	for Financial Decision making (OR)				
	Corporate Finance	TH	4	Actuarial Science				
	4*2+2*3	4						
Cum. Cr. For PG Diploma in Finance	28			8	4	4	-	44

Year	Lev el	Se m (2y r)		Ma	ijor		R M	OJT/F P	RP	Cu m. Cr.	Degre e
(MSc -		Se m III	4*2+2* Technical Analysis Derivatives Fixed Income Securities Global Portfolio Investment Analysis Derivatives 4*2+2*3	3 THTHTH HHPRTH4	2 2 4 4	4 Infrastructur e and Project Finance (OR) Mutual Fund (OR) Entrepreneu rial Finance, Venture Capital and Private Equity	_		Research Project 4	22	PG
Financ e) 2	6.5	Se m IV	4*2+2* Mergers, Acquisition s and Corporate Restructuri ng Structured Finance Risk Managem ent Internation al Finance 4*2+2*2	2 T H T H T H	4 4 2	TH Emerging Trends in Environment al Accounting and Finance (OR) Wealth Managemen t (OR) Trading Strategies and Financial Models		-	Dissertati on 6	22	e after 3-yr UG or PG Degre e after 4-yr UG
Cum. C PG D Fil	Cum. Cr. For 1 Yr PG Diploma in Finance		28			8	4	4	-	44	
Cum. C M.Sc.	r. For 2 (Finand	2 Yr ce)	54			16	4	4	10	88	

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SEM – I

Two Years M.Sc. (Finance) Programme

Course Structure

F.Y. M.Sc. (Finance)

(To be implemented from Academic Year- 2023-24)

No. of Courses	Semester I	Credits
1	Mandatory	anna Cane Calan
1(A)	Economics	02
1(B)	Quantitative Methods	02
1(C)	Emerging Technologies in Finance – Block	02
1(D)	Financial Management	04
1(E)	Accounting and Financial Reporting	04
2	Electives (one)	energia anti-article Secondaria
	Effective Communication OR Foundation of Quantitative Methods OR Foundation of Computing OR Foundation of Accounting Or Foundation of Economics	
3	Research Methodology	04
4	OJT/FP	na sana ana ana ana ana ana ana ana ana
narr 5 and		
	Total Credits	22

Economics (Mandatory Course - 2 Credits)

Modules at a Glance

Sr.	Module	No. of Hours
1	Macroeconomics	15
2	Financial Economics	15
Total		30

Course	1. Student will be able to describe market economy and its variables
Outcomes	2. Student will be able to illustrate the impact of changes in aggregate demand on
	 economy. 3. Student will be able to categorize tools of Fiscal Policy and Monetary policy. 4. Student will be able to compare modern trade theory and alternate trade
	theories5. Student will be able to evaluate role of tariff and non-tariff barriers on economy6. Student will be able to understand fundamental theories of Finance

Sr. No.	Modules / Units
	Macroeconomics
Control of the second secon	 An overview of the modern market economy as a system for dealing with the problem of scarcity. The analysis of relationships among such variables as national income, employment, inflation and the quantity of money. Managing aggregate demand; fiscal policy; money and the banking system; monetary policy; the debate over monetary and fiscal policy; budget deficits in the short and long run; trade- off between inflation and unemployment. Modern Trade Theory; Alternative Trade Theories. Trade Policy: Commercial Policy: Tariffs and Nontariff Trade Barriers; Economic Integration (Free Trade Agreements); Balance of Payments; Foreign Exchange Market; Exchange Rate Determination: Modern Exchange Rate System and Policies.
2	Financial Economics
	 Fundamental Theory of Finance: Absence of Arbitrage and Efficient Markets; Existence of Positive Linear Pricing Rule; Risk Neutral (Martingale) Probabilities and State Pricing. Preferences and Uncertainty: Expected Utility Theory; Linear Risk Tolerance Preferences; Jensen's Inequality and Risk Aversion; Ordering Preferences by Risk Aversion; Stochastic Dominance; Insurance and Certainty Equivalence; Alternative Psychological and Behavioral Approaches.

Reference Books

- Intermediate Microeconomics 7e by Varian, Hal R., W.W. Norton (2005).
- Macroeconomics 6e by Abel, Bernanke, and Croushore, Prentice Hall (2007).
- International Economics 13e by Robert J. Carbaugh ITP (2010).
- Financial Economics 2e by Z. Bodie (2008), Pearson Education India.

Required Texts

 Economics by N. Gregory Mankiw and Mark P. Taylor (2006), Thompson Learning.

Quantitative Method (Major/ Mandatory Course - 2 Credits)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Introductory Algebra and Liner Equations	15
2	Non-Linear Equations, Inferential Statistics and Financial Calculus	15
	Total	30

	 Student will be able to understand properties and apply principles of equations in solving simple problems Student will be able to solve simple problems using Exponents and roots. Student will be able to apply addition/ subtraction division /multiplication for polynomials Student will be able to calculate simple problems using Exponents and roots. Student will be able to determine graphic solutions of simultaneous & linear equations Student will be able to apply quadratic function for Revenue/Cost/ Dufit access
	 Student will be able to solve simple problems using Logarithm
Sr. No.	Modules /
Careford and the second second	Units
	Introductory Algebra, Liner Equations and Non-Ellicar Equations
	Properties and Principles of Equations - Addition and Subtraction
	Properties of Equations; Multiplication and Division Properties of
	Equations; Using the Properties to Simplify Terms in Equations,
	including Variables; Transformation Principles; Solving Problems using
	Equations and Inequalities.

	Exponents and Roots - Bases, Factors, and Exponents; Expressing
	Exponents in Words; Negative Exponents and Negative Bases; Adding
	and Subtracting Numbers with Exponents; Multiplying and Dividing
	Numbers with Exponents.
	 Polynomials - Adding and Subtracting Polynomials; Multiplying and
	Dividing Polynomials; The Product of Powers and the Power of a
	Product; Uses of Polynomials – Area and Volume Problems.
	 Graphs of linear equations; Algebraic solution of simultaneous linear
	equations; Supply and demand analysis; Algebraic solution of
	simultaneous equations; Transposition of formulae; National income
	determination using linear equations.
	 Quadratic functions; Revenue, cost and profit; Indices and logarithms;
	Exponential and natural logarithm functions.
2	Inferential Statistics, Financial Calculus and Mathematical Programming
	 Quadratic functions; Revenue, cost and profil; Indices and logarithms;
	Exponential and natural logarithm functions.
	 Estimating and Confidence intervals; Hypothesis testing; Non-
	narametric tests.
	- Taylor series: Ordinary differential equations; Similarity solutions;
	 Provision motion: Stochastic differential equations; Itô's lemma;
	Continuous-time stochastic differential equations as discrete-time
	processes: Correlated random walks; Using Itô's lemma to manipulate
	stochastic differential equations.
	Sidenastic unclential equations
	Line an Dreatommina, Solving Linear Providina diabiliount, on prot
	Linear Programming; Solving Linear Programs graphically; employ

- Probability and Random Processes by Grimmett and Stirzaker, Oxford University Press (1997).
- Time Series Analysis by J.D. Hamilton, Princeton University Press (1994).
- Quantitative Finance 2e by Paul Wilmott, John Wiley (2007)

 Mathematics for Finance by Marek Capiński and Tomasz Zastawniak, Springer (2003).

Reference Text:

 Methods of Mathematical Finance by Ioannis Karatzas, Steven E. Shreve (Springer) 2011.

	 Fintech unicorns and business models Blockchain Foundations
	 Blocks and Blockchain, the Chain, Nodes and Network
	Blockchain in Use
	 Trust Framework and Consensus Mechanisms, Public, Consortium,
	Private Blockchains, Blockchain Interoperability
2	Blockchain and Bitcoin Cryptography
<u></u>	Cryptography
	Application to Blockchain
	Blockchain and Bitcoin
	 Example Blockchain Networks and Use Cases
	Cryptocurrencies Primer
	Bitcoin and Applications
	 Cryptocurrencies and Digital Crypto Wallets
	Types of Cryptocurrencies
	 Cryptocurrencies and Applications
	What is an ICO?
	 Importance of ICO in Alternative Finance
	Regulations for Cryptos and tokens
1	

1. Financial Technology: Fintech, Blockchain, Smart Contracts, Jeff Reed, Createspace Independent Publishers

Reference Text:

- 1. Fintech Solutions A Complete Guide, by Gerardus Blokdyk, 5STARCooks (Kindle Edition)
- 2. 3F: FUTURE FINTECH FRAMEWORK : A Vision to Simplify Understanding, Foster Innovation & Accelerate Growth, by KARTIK SWAMINATHAN, Notion Press
- 3. Disrupting Finance: Fin-Tech and Strategy in the 21st Century, Palgrave Studies in Digital Business & Enabling Technologies
- 4. Blockchain: Blockchain Technology and Cryptocurrency: Ultimate Beginner's Guide to Smart Contracts, Distributed Ledger, Fintech, Investing, Trading and Mining in the World of Cryptocurrencies, by Matthew Connor and Maia Collins,

Emerging Technologies in Finance – Block chain, Bitcoin and Fintech (Major/ Mandatory Course - 2 Credits)

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Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Fintech Primer and Blockchain Technology	15
2	Blockchain and Bitcoin Cryptography	15
	Total	30

	 Student will be able to describe market Fintech landscape and Fintech technologies Student will be able to illustrate cases of applications of Fintech Student will be able to categorize cryptocurrencies. Student will be able to differentiate between Blockchain with Bitcoins Student will be able to evaluate applications of Blockchain technology Student will be able to illustrate cases of applications of Student will be able to illustrate cases of applications of Student will be able to illustrate cases of applications of Student will be able to defend / ague regulations for crypto
Sr. No.	Modules / Units
1	Fintech Primer and Blockchain Technology
	 Introduction to the Fintech landscape
	FinTech Architecture
	FinTech Technologies
	 Latest Trends and future of FinTech
	Applications of FinTech
	Use cases of FinTech in banks
	Fintech startups

Financial Management (Major/ Mandatory Course - 4 Credits)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Introduction and Environment of Finance	15
2	Valuation Concepts and Financial Planning	15
3	Working Capital Management, Short Term Planning and Investment in Capital Assets	15
4	Cost of Capital, Capital Structure and Dividend Policy	15
	Total	60

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Course	 Student will be able to outline role of corporate manager
Outcome	2. Student should be able to define goals of a firm
	3. Student will be able to explain various components of financial market
	4. Student will be able to use time value of menoy in the
- 1000 - 1000 - 1000	5. Student will be able to break-down componente of domains of a site illustrate the tools of working capital management
	6. Student will be able to determine appropriate methods of capital budgeting
Andreas - Lorente - Lorente del Landreas - Lorente - Lorente del Landreas - Lorente -	 Student will be able to generate financial policy recommendations through use of tools like cost of capital, leverage. EBIT/EPS analysis for
annar anna an an	capital structure determination and
	8. Student will be able to generate recommendations for dividend policy
Sr. No.	Modules /
	Units

 Role of the corporate financial manager (CFO); corporate finance decisions; goals of firm - profit maximization v. shareholders' wealth maximization; basic responsibilities of financial managers; social 	
decisions; goals of firm - profit maximization v. shareholders' wealth maximization; basic responsibilities of financial managers; social	
maximization; basic responsibilities of financial managers; social	
responsibility of the firm; agency relationships and conflicts.	
 Financial markets – capital markets (equity markets, debt market), 	
money markets, foreign exchange market, and derivatives markets; term	
loans and leases; accounting treatment of leases; convertibles, and	
warrants.	
2 Valuation Concepts and Financial Planning	
 Future values and compound interest; present values; level cash flows: 	
perpetuities and annuities; valuation of long-term securities; risk and	
return; measuring portfolio risk.	
 Introduction to financial planning; financial planning models; components 	
of a financial planning model; pitfalls in model design; role of financial	
planning models; external financing and growth; deferred taxes and	
financial analysis; sustainable growth modeling.	
3 Working Capital Management, Short Term Planning and Investment in	
Capital Assets	
Components of working capital, working capital and the cash conversion	
cycle, working capital trade-off; links between long- term and short-term	
financing; tracing changes in cash and working capital; cash budgeting,	
forecast sources of cash, forecast uses of cash, a short-term financing	
plan, options for short-term financing, evaluating the plan, sources of	
short-term financing; cash management, management of account	
receivables.	
 Capital budgeting and estimating cash flows; capital budgeting 	
techniques; multiple internal rates of return; replacement chain analysis;	
risk and managerial options in capital budgeting.	
4 Cost of Capital, Capital Structure and Dividend Policy	

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Γ	 Required returns and the cost of capital; operating and financial
	leverage; capital structure determination; theories of capital structure;
	dividend policy; theories of relevance and irrelevance of dividend policy.

 Fundamentals of Financial Management by Eugene F. Brigham, Joel F. Houston (2011), South Western (Cengage Learning)

Reference Text:

 Fundamentals of Financial Management by James C. Van Horne, John M. Wachowicz (2008), Prentice Hall.

Accounting, Financial Reporting and Analysis (Major/ Mandatory Course - 4 Credits)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Context and Purpose of Financial Reporting, The qualitative characteristics of financial information, Regulatory Framework of Accounting	15
2	Principles of Taxation, Accounting and Analysis of Asset and Accounting and Analysis of Liability and Equity	15
3	Revenue Analysis, Expense Analysis and Credit Analysis and Distress Prediction	15
4	Business Combinations and Interpretations of financial statements	15
	Total	60

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Course	1. Student will be able to outline purpose and characteristics of financial	
Outcome	 reporting Student will be able to explain concepts of taxation Student should be able to summarize and give examples of accounting 	
	and analysis of liabilities	
	 Student will be able to classify revenue recognition rules and expense analysis 	
	 Student will be able to calculate and apply ratio analysis for financial decision making 	
Sr. No.	Modules /	
	Units	
1	Context and Purpose of Financial Reporting, The qualitative	
and the second sec	characteristics of financial information, Regulatory Framework of	
	Accounting	

	 The reasons for and objectives of financial reporting; users' and
	stakeholders' needs; the main elements of financial reporting.
	 Define, understand, and apply accounting concepts, including concept of
	true and fair view, going concern, accruals, consistency, materiality,
	relevance, reliability, substance over form, neutrality, prudence,
	completeness, comparability, understandability, and business entity
	concept.
	 Reasons for existence of a regulatory framework; legal provisions
	relating to accounting; setting Indian accounting standards, convergence
	of international accounting standards, International Financial Reporting
	Standards (IFRS).
2	Principles of Taxation, Accounting and Analysis of Asset and
	Accounting and Analysis of Liability and Equity
	 Principles of taxation, concepts of tax evasion, tax avoidance, and tax
	planning, tax havens, overview of income tax, accounting for income tax,
	deferred tax assets, and deferred tax liability.
	Historical cost and conservatism, asset reporting challenges, common
	misconceptions about asset accounting.
	Liability definition and reporting challenges; common misconceptions
	about liability accounting; equity definition and reporting challenges.
3	Revenue Analysis, Expense Analysis and Credit Analysis and Distress
	Prediction
	Revenue recognition rule, revenue recognition challenges
	Matching and conservatism, expense reporting challenges
	Credit analysis process, prediction of distress and turnaround.
1	Business Combinations and Interpretations of financial statements
	The concept and principles of a group: concept of consolidated financial
	statements: preparation of consolidated financial statements.
	Botio analysis: cash flow analysis: funds flow analysis: value added
	Railo analysis, cash now analysis, runus now analysis, value added
	statements, initiations of intarioral statements, Calculation and
	Interpretation of accounting ratios and trends to address users and
	stakenoiders needs, inflitations of interpretation techniques.

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 Financial Reporting and Analysis by Lawrence Revsine, Daniel Collins, Bruce Johnson, Fred Mittelstaedt McGraw-Hill (2011).

Reference Text:

• International Financial Reporting and Analysis by Alexander, Britton, Jorissen Thomson (2007).

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Effective Communication (Elective Course - 4 Credits) (Any One)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Introduction and Theory of Communication, The communication Process and Channels of communication	15
2	Verbal and Non-Verbal Communication, Essential of effective verbal communication, Meetings	15
3	Public Speaking, Written Communication and Report Writing	15
4	Communication and Culture, Written Communication	15
	Total	60

	 3. Student will be able to explain and give examples of various types of
	 4. Student will be able to use communication methods like public speaking/ Report Writing / other business communications 5. Student should be able to derive impact of culture/ technology and on communication
Sr. No.	Modules /
radalar Angeler (1999) Angeler (1999)	Units
1	Introduction and Theory of Communication, The communication
and the second	

	 Introduction and Theory of Communication: nature, function & scope; 	
	The 7 Cs of communication	
	 The communication Process: classification , components and models 	
	of communication: Problems in communication (Filters)	
	 Channels of communication: Formal v/s Informal, Upward, Downward, 	
	Horizontal Grapevine: Barriers to communication.	
	Verbal and Nen Verbal Communication Essential of effective verbal	
·····2	2 Verbal and Non-verbal communication, Essential of encouve verbal	
	communication, weetings	
	Verbal and Non-verbal communication: Listening, Kinesics,	
	Paralanguage, Proxemics	
	 Essentials of effective verbal communication: Voice modulation, 	
	Tone, Pitch, Knowledge and self confidence	
	 Meetings: Types; purpose. Group Discussions: Do's and Don'ts; 	
	Committees: Types, Advantages and disadvantages, effectiveness	
3	Public Speaking, Written Communication and Report Writing	
	 Public Speaking: Preparation, Attire, Posture and Delivery techniques 	
	 Written communication: Business letters, Types, Essentials, Format, 	
	common errors, E-mail: format, language and courtesy, common	
	errors.	
	 Report Writing: Types of Reports, requirements, format 	
4	Communication and Culture, Written Communication and Report	
	Writing	
	 Communication and Culture: Intercultural sensitivities, Business 	
	etiquette when dealing with people from different nationalities.	
	 Impact of modern Technology on Business Communication: the 	
	paperless office use of modern devices	
	Cases, computer and exercises, audio-visual	
	• Cases, sample communications and excicices, address sample	

Foundation of Quantitative Methods (Elective Course - 4 Credits) (Any One)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Differentiation and Integration	15
2	Combinatorial Problems, Descriptive Statistics	15
3	Probabilities	15
4	Modelling simple relationships	15
	Total	60

Course Outcome	 Student will be able to calculate and solve simple problems of Differentiation and Integration Student will be able to use and apply descriptive statistics. Student should be able to solve basic probability problems Student will be able to illustrate Modelling simple relationships (Linear function, regression, correlation)
Sr. No.	Modules /
	Units
1	Differentiation and Integration
	The derivative of a function; Rules of differentiation; Marginal functions;
	Optimization of economic functions; derivative of the exponential and
	natural logarithm functions; Indefinite integration; Definite integration.
2	Combinatorial Problems, Descriptive Statistics
	 The Addition Principle; Tree Diagrams and the Multiplication Principle;
	Permutations and Combinations; Permutations with Repetitions.
	 Meaning and nature of statistics; sampling and data collection;

	presenting and describing small data sets; presenting and describing	
	large data sets; measures of location; measures of variation; index	
	numbers.	
3	Probabilities	
	 Relative Frequency and the Axioms of Probabilities; Probability 	
	Assignments by Combinatorial Methods; Independence; Conditional	
	Probabilities; Theorem of Total Probability and the Theorem of Bayes	
	Probability Distributions: The binomial distribution; Poisson	
	distribution; exponential distribution; normal distribution.	
4	Modelling simple relationships	
	 Relationships, functions and equations; Linear functions; Least- 	
	squares linear regression; appropriateness and correlation	

- Mathematics for Economics and Business 5e by Ian Jacques, FT Prentice Hall (2006).
- Statistics for Business and Economics by David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, South Western Cengage Learning (2008).

Reference Text:

• Mathematics for Finance : An Introduction to Financial Engineering by Marek Capinski and Tomasz Zastawniak, published by Springer (2003).

Foundation of Computing (Elective Course - 4 Credits) (Any One)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Introduction to Computer Programming and Using Data and Variables	15
2	Using Programme Logic and Using Procedures and Functions	15
3	Developing a User Interface and Programming Approaches	15
4	Software Development Process and Introduction to C/C++	15
	Total	60

Course	 Student will be able to outline application of computers and using computer programming for problem solving Student will be able to summarize and give examples of using Programme Logic and Using Procedures and Functions Student will be able to calculate / predict/ apply/ solve/ illustrate/ use Student will be able to classify User Interface and Programming Approaches Student will be able to choose / support/ relate / determine/ defend/ judge/ grade / compare / contrast/ argue / justify Student will be able to comprehend Software Development Process Student should be able to understand basics of C/C++
Sr. No.	Modules / Units
1	Introduction to Computer Programming and Using Data and Variables
	 Introduction to computers, programming and algorithms, Overview of Software Development; Phases in the Execution of a Computer Programme; Overview of Problem-Solving Techniques; Overview of

	Programme Types; Identifying the phases in the execution of a
	computer programme; Computer programmes and programming
	languages; Problem-solving techniques.
	 Fundamental concepts of variables and data types; Using Variables;
	Using Operators; Using Programming Syntax.
2	Using Programme Logic and Using Procedures and Functions
	 Common programming constructs; Control programme flow;
	Implementing conditional expressions and looping statements; Using
	Branching; Using Loops; Identifying Logic Errors.
	 Use of procedures and functions to create more modular computer
	programmes; Arguments and parameters; Identifying Functions;
	Passing Arguments to a Procedure.
3	Developing a User Interface and Programming Approaches
	 Designing user interfaces for software applications; Best practices for
	user interface design; Identify the features of a good user interface;
	Build Windows-based and Web-based user interfaces.
	 Common programming methodologies; procedural programming;
	object-oriented programming; Using the Procedural Programming
	Approach: Using the Object-Oriented Programming Approach;
	Examining Classes: Features and advantages of object-oriented
	programming.
4	Software Development Process and Introduction to C/C++
	 Phases of the software development life cycle; Introduction to the
	Unified Modeling Language; Developing Use-Case Diagrams;
	Examining Other UML Diagrams; Introduction to object oriented
	programming (OOP) Taxonomies, inheritance, modularity and
	reusability; Introduction to advanced data structures and classes
	methods and attributes, public, private and protected.
	 Basic I/O, variables, conditional statements; loops; and functions,
	scope, header files, break, continue, Exception handling; Function
	variables: scope, visibility and lifetime Call by value/call by reference;

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Arrays, strings and pointers Static versus dynamic memory allocation,
multidimensional arrays.

• Concepts, Techniques, and Models of Computer Programming by Peter Van Roy and Seif Haridi, MIT Press (2004).

Reference Text:

 Problem Solving and Programming Concepts by Maureen Sprankle, Jim Hubbard (Prentice Hall) 2008.

Foundation of Accounting (Elective Course - 4 Credits) (Any One)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Context and Purpose of Financial Accounting, The use of Double Entry and accounting systems	15
2	Income Measurement and The reporting cycle	15
3	Qualitative Characteristics of Financial Information and Managerial Accounting	15
4	Cost – Volume – Profit and Business Scalability	15
	Total	60

Course	1. Student will be able to outline basics of financial accounting
Outcome	2. Student should be able to build account statement using double entry
	book keeping
	 Student will be able to explain Income Measurement and concepts of reporting cycle
	4. Student will be able to categorize and illustrate concept of true and
	fair view, going concern, accruals, consistency, materiality, relevance, reliability and others.
	5. Student will be able to choose / support/ relate / determine/ defend/
	judge/ grade / compare / contrast/ argue / justify
	6. Student will be able to generate decision model using Cost – Volume
	 Profit analysis for Business Scalability
Sr. No.	Modules /
	Units
1	Context and Purpose of Financial Accounting, The use of Double Entry and accounting systems

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	 Nature of financial and managerial accounting information; accounting profession and accounting careers; accounting equation; Core financial statements. Accounts, debits and credits; The journal; The general ledger; Trial balance; Computerized processing systems; T-Accounts; Double- entry book-keeping principles including the maintenance of records and sources of information; Recording Transactions and events - Sales and purchases; cash; stock; tangible fixed assets; depreciation; intangible fixed assets and amortisation; accruals and prepayments; debtors and creditors; provisions and contingencies; capital structure and finance costs.
2	Income Measurement and The reporting cycle
	 Measurement transactions and events; periodicity assumption and its accounting implications; Basic elements of revenue recognition; Basic elements of expense recognition; adjusting process and related entries; Accrual versus cash-basis accounting. The reasons for and objectives of financial reporting; users' and stakeholders' needs; the main elements of tinancial reporting; Preparation of financial statements; accounting cycle and closing process; importance of business liquidity and the concept of an operating cycle.
3	Qualitative Characteristics of Financial Information and Managerial
	 Accounting Define, understand, and apply accounting concepts, including concept of true and fair view, going concern, accruals, consistency, materiality, relevance, reliability, substance over form, neutrality, prudence, completeness, comparability, understandability, and business entity concepts Distinguishing characteristics of managerial accounting; Managerial accounting's role in planning, directing, and controlling; Key production components: direct materials, direct labor, and factory overhead; Product costs versus period costs; Categories of inventory for manufacturers and related financial statement implications.
4	Cost – Volume – Profit and Business Scalability
	 Cost behavior patterns and implications for managing a business; Methods of cost behavior analysis; Break-even and target income analysis; Cost and profit sensitivity analysis; Cost-volume-profit analysis for multiple products; Critical assumptions of cost-volume- profit modeling.

• Financial and Management Accounting: An Introduction by Pauline Weetman, Pearson (2010).

Reference Text:

• Financial and Managerial Accounting by Charles Horngren & Walter Harrison (Prentice-Hall).

Foundation of Economics (Elective Course - 4 Credits) (Any One)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Nature, Markets and Resource Allocation, Utility Analysis, Demand, Revenue and Consumer Behaviour and Consumer Theory	15
2	Factors of Production, Cost of Production, Price Elasticity of Supply	15
3	Market Structures, Market Failure	15
4	Money and Banking, Measuring Economic Performance, Economics Changes and Cycles	15
	Total	60

Course	 Student will be able to outline and explain the concepts of demand, consumer behavior and utility analysis, supply Student will be able to summarize concept of elasticity of Demand and give examples of its application in market environment Student will be able explain the laws of production and cost concepts applicable to short run and long run market theory Student will be able to break-down and illustrate goal of profit maximization pursued in perfect and imperfect markets Student will be able to relate the concept of money and role of
	 monetary policy 6. Student will be able to evaluate the national income aggregates and their role in economic growth process including business cycles.
Sr. No.	Modules / Units
1	Nature, Markets and Resource Allocation, Utility Analysis, Demand, Revenue and Consumer Behaviour and Consumer Theory

r	
	 Nature, scope and methods of economics
	 Markets and Resource Allocation: Wants, limited resources and
	choice; Demand curves and functions; Supply curves and functions;
	Price determination; Changes in market price and quantity.
	Utility Analysis: consumer choice, utility, diminishing marginal utility,
	consumer choice and equilibrium, consumer surplus, indifference
	curve analysis.
	Demand, Revenue and Consumer Behaviour: Price elasticity of
	demand; Price elasticity of demand and revenue; Total, average and
	marginal revenue: Elasticity and tax incidence: Other categories of
	elasticity of demand: Veblen effect and consumer behavior:
	Consumer surplus:
	Consumer Theory: Choice Preferences Utility: Demand Revealed
	Preferences
2	Factors of Production, Cost of Production, Price Elasticity of Supply
	Factors of production; Combining factors of production: the laws of
	production - Short run and Long run;
	Costs of production: short run; Costs of production: long run; Deciding
	whether to produce in the short run and the long run;
	Price elasticity of supply (PES); Outsourcing and cost; Governments,
	location and cost; Producer surplus.
3	Market Structures, Market Failure
	Market Structures: Profit Maximization, Cost Minimization; Perfect
	competition; Contestable market theory; Monopoly; Monopolistic
	competition; Oligopoly. Oligopoly and Game Theory
	Market Failure, Regulation and Competition: Types of market failure;
	Correcting market failures; Deregulation and privatisation; competition
	policy, overview of competition laws in India.
4	Money and Banking, Measuring Economic Performance, Economics
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an a stradon como de e co	Changes and Cycles
	 Money and Banking: The Origins of Money; Money Supply; Money Creation Process; Central Bank Tools for Changing the Money Supply. Measuring Economic Performance: National Income Accounting; National income: definitions and measurement; National income data: international comparisons; Components of the circular flow; Equilibrium in the circular flow; Changes in national income; National income multiplier; Inflationary and deflationary gaps; Measuring Price Changes and the Unemployment Rate.
	 Economic Changes and Cycles: Inflation and Deflation; Business Cycles; Economic Growth; National Income Determination.

• Economics for Business and Management 3e by Griffiths and Wall, Pearson (2011).

Reference Text:

• Economics by N. Gregory Mankiw and Mark P. Taylor (2006), Thompson Learning.

Research Methodology (RM - 4 Crcdits)

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Meaning and aspects of research	15
2	Research Design and Data Collection and Analysis	15
3	Probability Distribution and Hypothesis Testing	15
4	Correlation and Regression Analysis and Computer Application	15
	Total	60

Course Outcome	 Student will be able to define research and categorize types of research Student will be able to explain and categorize various research methods and research designs Student will be able to illustrate sampling techniques using appropriate examples Student will be able to use statistical techniques for probability distribution and hypothesis testing Student will be able to determine application of Correlation and Regression Analysis in research Student will be able to build research model for analysis through Computer Application
Sr. No.	Modules / Units
1	Meaning and aspects of research
	 Definition and Characteristics of Research: Research – Definition; Concept of Construct, Postulate, Proposition, Thesis, Hypothesis, Law, and Principle. Philosophy and validity of research. Objective of research. Various functions that describe characteristics of research such as systematic, valid, verifiable, empirical and critical approach. Types of Research: Pure and applied research. Descriptive and explanatory research. Units of analysis; Concept, variable(s), hypothesis(ses), paradigm; Stages of research
---	--
	 Research Design and Data Collection and Analysis Formulating the Research Problem, Literature Review, Developing the objectives, preparing the research design including sample Design, Sample size. Types of research design with suitable examples. Field Research: Concept and history of fieldwork; Stages of fieldwork – selecting a research setting, gaining access, presenting oneself, becoming invisible, gathering information; Field notes – types, coding and analysis; Ethnography. Observation and Case Study: Concept of observation, its advantages and disadvantages; Types of observation; field observation – participant and non-participant observation; collection of genealogies; structured and unstructured observation; Concepts of case, case study, case study method, case approach; Types of case study. Interview: Concept and types of interview – informal, unstructured, semI-structured and structured; intensive interviewing; telephone interview; interviewing children; The interviewer – tasks, selection, and training; Advantages and limitations of interviewing of questions; open and closed response categories; response category format, Mailed questionnaire; factors affecting mail surveys; Sampling techniques. Outcome of Research: Relevance, interest, available data, choice of data, Analysis of data, Generalization and interpretation of analysis, Preparation of the Report on conclusions reached, Testing validity of research outcomes, Suggestions and recommendations, identifying future scope.
3	Probability Distribution and Hypothesis Testing
	 Basic Statistics: importance of statistical inquiries and their limitations; collection and tabulation of statistical data - graphical presentation, frequency distribution. Measures of central tendency, measures of

* *

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	 dispersion Probability Distribution and Hypothesis Testing Type I and II error, testing of mean, proportion, tests for equality of mean and variances of two populations, confidence interval, Z test and χ 2 test for goodness of fit, ANOVA (one way classification), Non parametric tests: sign test, U test.
4	 Correlation and Regression Analysis and Computer Application Correlation and Regression Analysis: Karl Pearson's and Rank Correlation coefficient, simple linear regression: least squares method, Linear Programming: Graphical solution, simplex method, dual, sensitivity analysis, transportation and assignment problems. Statistical data analysis: generating charts/ graph and other features. Introduction to tools: Tools used may be Microsoft Excel, Open office or similar tools.

Required Text:

1. Research Methods For Business: A Skill Building Approach by by Uma Sekaran and Roger Bougie, publishers John Wiley & Sons

Reference Text

- Dawson, Catherine, 2002, Practical Research Methods, New Delhi, UBS Publishers' Distributors
- 2. Kothari, C.R., 1985, Research Methodology-Methods and Techniques, New Delhi, Wiley

Eastern Limited.

 Kumar, Ranjit, 2005, Research Methodology-A Step-by-Step Guide for Beginners,

(2nd.ed), Singapore, Pearson Education.

- 5. Shrivastava, Shenoy& Sharma, Quantitative Techniques for Managerial Decisions, Wiley
- 6. Goode W J & Hatt P K, Methods in social research, McGraw Hill
- Basic Computer Science and Communication Engineering R. Rajaram (SCITECH)

<u>Annexure I</u>

Scheme of Examination and Standard of Passing

- (1) Each course will have two components of evaluation. Term work will have 50 per cent weightage for internal assessment. Semester-end written examination will have weight of 50 per cent.
- (2) The student shall obtain a minimum of 40 per cent marks in the internal assessment and 40 per cent marks in semester-end examination, separately.
- (3) The student will have to complete the summer project between semester II and III and submit the summer project report

Internal assessment

- (4) For internal assessment, a teacher may select a variety of procedures, such as:
 - (i) Short quizzes, viva, presentations; or
 - (ii) Assignments, seminars, practical journal work; or
 - (iii) Extension, field, experimental work; or
 - (iv) Research project by individual students or group of not more than five students; or
 - (v) Open book test, review of research papers or chapters from research publications; or
 - (vi) Periodical tests, case studies, online tests, or a combination of the these; or
 - (vii) Overall conduct as a responsible student, mannerism and exhibition of leadership qualities in organizing co-curricular activities and attendance.
- (5) The marks of the Internal Assessment shall not be disclosed to the students prior to the declaration of the Semester End results.
- (6) There shall be no marks assigned for attendance to the student. However, five marks for active participation and five marks for overall conduct are to be assigned based on the presence and participation of the learner during the lectures.

Semester-End Examination

- (7) Duration -The semester and written examination will be of two hours.
- (8) Time All examinations will be held at the end of each semester and will be conducted by the University as per the existing norms.

Questions Paper Pattern -

There shall be five questions each of 10 marks and with internal option having not more than 15 marks. All questions shall be compulsory with internal choice within the questions.

Questio	Particular	Marks
n No		
Q-1	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	
Q-2 ·	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	
Q-3	Attempt Any 2	10 Marks
	a. Full Length Question	
	h. Full Length Question	
	c. Full Length Question	
Q-4	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	
Q-5	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	

Dissertation

- (9) The student has to prepare and submit a dissertation during the semester IV. The head of the Institute shall assign a guide to the student. The topic of the dissertation and the scope of work shall be approved by the guide and the head of the Institute, and the student shall work under the direct supervision of the guide.
- (10) The head of the Institute would appoint a two-member committee to assess the dissertation.
- (11) Viva voce will be conducted by a panel of two examiners appointed by the head of the institution.

Carry Forward of Marks

- (12) A student who passes the internal assessment but fails in the semester-end examination of the course shall reappear for the semester end examination of that course. However, the internal assessment marks shall be carried forward and the student shall be entitled for grade obtained by him/ her on passing.
- (13) A student who fails in the internal assessment but passes in the semester-end examination of the course shall resubmit and reappear for the internal assessment in the form of projects/ assignments of that course. However, the marks of semester-end examination shall be carried forward and the students shall be entitled for grade obtained by him/her on passing.
- (14) The evaluation of the student who fails in the internal assessment and reappears for the same shall consist of one project of 40 marks which will be divided into 20 marks for the documentation of the project, 10 marks for the presentation and 10 marks for the viva voce.

Allowed to Keep Term (ATKT)

- (15) A student shall be allowed to keep term for Semester II irrespective of the number of heads of failure on the semester I.
- (16) A student shall be allowed to keep term for semester III if:(i) the student passes each of semester I and semester II; or(ii) the student fails in not more than two courses of Semester I and Semester II taken together.
- (17) A student shall be allowed to keep term for Semester IV irrespective of the number of heads of failure on the Semester III. However, the student has to pass each of the Semester I and semester II and summer project, in order to appear for semester IV examination.

(18) The results of semester IV shall be kept in abeyance until the student passes semester I, II, and III examinations, and the summer project.

Additional Examinations

(19) Additional Class Test or Assignment

The head of the institution may, on being satisfied that the student had remained absent on valid ground, allow him/ her to appear for one additional class test or assignment after complying with the necessary formalities.

- (20) Additional Semester-End Examination
 - (i) There will be one additional semester-end examination for Semester I, II, and, III, for students have failed or were absent.
 - (ii) The additional semester-end examination for Semester I, II, and III, shall be held 20 days after the declaration of results but not later than 40 days.
- (21) The following student shall be eligible for appearing at the additional semester end examination:
 - A student who has remained absent in some or all the courses due to medical grounds or for representing the institute, college, or, university in sports, cultural, or similar activities; or
 - (ii) A student who has failed in some or all the courses; or
 - (iii) A student who was punished under 0.5050(12) (1) only (use of unfair means); or
 - (iv) A student who, for any other reason which is considered valid, under exceptional circumstances and to the satisfaction of the Principal or the Head of the Institution.

(22) <u>Conversion of Marks to Grades</u>

A 10 Grade Point Scale system will be followed. Each term work module will be evaluated in terms of marks first and then to letter grades as shown below:

Semester GPA/ Program CGPA Semester/ Program	% of Marks	Alpha-Sign/ Letter Grade Result
9.00-10.00	90.0-100	O (Outstanding)
8.00<9.00	80.00<90.00	A+ (Excellent)
7.00<8.00	70.00<80.00	A (Very Good)
6.00<7.00	60.00<70.00	B+ (Good)
5.50<6.00	55.00<60.00	B (Above average)
5.00<5.50	50.00<55.00	C (Average and Pass)
4.00<5.00	40.00<50.00	P (Pass)
Below 4.00	Below 40	F (Fail)
Ab (Absent)		Absent

(23)

Semester Grade Point Average (SGPA)

The performance of a learner in a semester is indicated by a number called Semester Grade Point Average (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the learner during the Semester. For example, if a learner passes five courses (Theory/Projects etc.) in a semester with credits C1, C2, C3, C4 and C5 and learners grade points in these courses are G1, G2, G3, G4 and G5 respectively, then learners' SGPA is equal to:

SGPA (Si) =
$$\sum Ci \times Gi$$

SGPA/ CGPA Calculation

(<u>∑Ci)</u>

Where, ci is the number of credits of the ith course and Gi is the grade points scored by the student in the ith course.

Cumulative Grade Point Average (CGPA)

An up to date assessment of the overall performance of a learner from the time s/he entered the University of Mumbai is obtained by calculating a number called the Cumulative Grade Point Average (CGPA), in a manner similar to the calculation of SGPA. The CGPA therefore considers all the courses mentioned in the curriculum/syllabus manual, towards the minimum requirement of the degree learner have enrolled for. The CGPA is calculated at the end of every semester to two decimal places and is indicated in semester grade report cards. The CGPA will reflect the failed status in case of F grade(s), till the course(s) is/are passed. When the course(s) is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA will only reflect the new grade and not the fail grades earned earlier.

Example: Up to semester r a learner has registered for n courses, among which s/he has "F" grade in Ith course. The semester grade report at the end of semester r therefore will contain a CGPA calculated as:

$CGPA = [\underline{\Sigma Ci \times Si}]$ $(\underline{\Sigma Ci})$

Where Si is the SGPA of the ith semester and ci is the total number of credits in that semester.

M.Sc. (Finance)

Team for Creation of Syllabus

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Name	College Name	Sign
Prof. Dr. Smita Shukla	Alkesh Dinesh Mody Institute for Financial and Management Studies	Brite stude
Dr. Abhiraj Shivdas	Alkesh Dinesh Mody Institute for Financial and Management Studies	Als
Dr. Rakesh Malusare	Alkesh Dinesh Mody Institute for Financial and Management Studies	2 ma Insom
	Management etadlee	11

Sign of HOD:	Sign of Dean:
Smile Slubb	Ligne '
Name of the Head: Prof. Dr. Smita Shukla Name of the Department: Alkesh Dinesh Mody Institute for Financial and Management Studies	Name of the Dean: Prof. S. S. Garje Name of the Faculty: Science and Technology

Appendix B

Justification for M.Sc. (Finance)

1	Necessity for Starting Course	The new program was necessary as per GR: dated 16 th May 2023
2	Whether the UGC has recommended the course:	It is as per UGC Guidelines
3	Whether all the courses have commenced from the academic year 2023-24	It will commenced from academic year 2023-24
4	The courses started by the University are self-financed, whether adequate number of eligible permanent faculties are available?	The department has eligible permanent faculty
5	To give details regarding the duration of the Course and is it possible to compress the course?	No, It is not possible to compress the course
6	The Intake capacity of each course and no. of admissions given in the current academic year	30
7	Opportunities of Employability/ Employment available after undertaking these courses:	The course is Industry linked course and builds up employability

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Sign of HOD Dr. Smita Shukla Alkesh Dinesh Mody Institute for Financial and Management Studies

Figné,

Sign of Dean Prof. S. Garje Science and Technology

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Aniversity of Mumbai



No. AAMS_UGS/ICC/2024-25/_99

CIRCULAR:-

Attention of the Principals of the Affiliated Colleges and Directors of the Recognized Institutions and the Head, University Departments is invited to this office circular No. AAMS_UGS/ICC/2023-24/23 dated 08th September, 2023 relating to the NEP UG & PG Syllabus.

They are hereby informed that the recommendations made by the Board of Studies in Management Studies at its meeting held on 21st May, 2024 and subsequently passed by the Board of Deans at its meeting held on 27th June, 2024 vide item No.6.7 (N) have been accepted by the Academic Council at its meeting held on 28th June, 2024 vide item No. 6.7 (N) and that in accordance therewith the syllabus for the M.Sc. (Finance) (Sem. II) is introduced as per appendix (NEP 2020) with effect from the academic year 2024-25.

(The circular is available on the University's website <u>www.mu.ac.in</u>).

Balisand

MUMBAI-400 032 21st August, 2024

(Prof.(Dr) Baliram Gaikwad) I/c Registrar

To

The Principals of the Affiliated Colleges, Directors of the Recognized Institutions and the Head, University Department.

<u>A.C/6.7(N)/28/06/2024</u>

Copy forwarded with Compliments for information to:-

- 1) The Chairman, Board of Deans,
- 2) The Dean, Faculty of Science & Technology,
- 3) The Chairman, Board of Studies in Management Studies.
- 4) The Director, Board of Examinations and Evaluation,
- 5) The Director, Board of Students Development,
- 6) The Director, Department of Information & Communication Technology,
- 7) The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari.
- 8) The Deputy Registrar, Admissions, Enrolment, Eligibility & Migration Department (AEM),



Cop	y forwarded for information and necessary action to :-
1	The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Dept)(AEM), <u>dr@eligi.mu.ac.in</u>
2	The Deputy Registrar, Result unit, Vidyanagari drresults@exam.mu.ac.in
3	The Deputy Registrar, Marks and Certificate Unit,. Vidyanagari dr.verification@mu.ac.in
4	The Deputy Registrar, Appointment Unit, Vidyanagari dr.appointment@exam.mu.ac.in
5	The Deputy Registrar, CAP Unit, Vidyanagari <u>cap.exam@mu.ac.in</u>
6	The Deputy Registrar, College Affiliations & Development Department (CAD), <u>deputyregistrar.uni@gmail.com</u>
7	The Deputy Registrar, PRO, Fort, (Publication Section), <u>Pro@mu.ac.in</u>
8	The Deputy Registrar, Executive Authorities Section (EA) eau120@fort.mu.ac.in
	He is requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to the above circular.
9	The Deputy Registrar, Research Administration & Promotion Cell (RAPC), rapc@mu.ac.in
10	The Deputy Registrar, Academic Appointments & Quality Assurance (AAQA) dy.registrar.tau.fort.mu.ac.in <u>ar.tau@fort.mu.ac.in</u>
11	The Deputy Registrar, College Teachers Approval Unit (CTA), <u>concolsection@gmail.com</u>
12	The Deputy Registrars, Finance & Accounts Section, fort draccounts@fort.mu.ac.in
13	The Deputy Registrar, Election Section, Fort drelection@election.mu.ac.in
14	The Assistant Registrar, Administrative Sub-Campus Thane, <u>thanesubcampus@mu.ac.in</u>
15	The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan, ar.seask@mu.ac.in
16	The Assistant Registrar, Ratnagiri Sub-centre, Ratnagiri, ratnagirisubcentre@gmail.com

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Сор	by for information :-
1	P.A to Hon'ble Vice-Chancellor,
	vice-chancellor@mu.ac.in
2	P.A to Pro-Vice-Chancellor
	pvc@fort.mu.ac.in
3	P.A to Registrar,
	registrar@fort.mu.ac.in
4	P.A to all Deans of all Faculties
5	P.A to Finance & Account Officers, (F & A.O),
	<u>camu@accounts.mu.ac.in</u>

1	The Chairman, Board of Deans
2	The Dean, Faculty of Humanities,
3	Chairman, Board of Studies,
4	The Director, Board of Examinations and Evaluation, <u>dboee@exam.mu.ac.in</u>
5	The Director, Board of Students Development,dsd@mu.ac.in@gmail.comDSWdirecotr@dsw.mu.ac.in
6	The Director, Department of Information & Communication Technology,
7	The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari, <u>director@idol.mu.ac.in</u>

AC – 28-06-2024 Item No. – 6.7 (N)

As Per NEP 2020



University of Mumbai



Semester II Syllabus for Approval

(As per NEP 2020)

No.	Headin	g		Particulars
1	Title of program		Α	Post Graduate Diploma in Finance
	O:	: A		
	0:	: B	В	M.Sc. (Finance) (Two Year)
	0:	: C	С	M.Sc. (Finance) (One Year)
2	O: Eligibility	:A	A	Graduate with minimum fifty per cent of marks; and with Mathematics or Statistics at the HSC or Equivalent level or Mathematics or Statistics at the first year of the degree course. With MH- CET OR CAT OR Institute Level CET
	O: Eligibility	:B	B	Graduate with minimum fift per cent of marks; and with Mathematics or Statistics at the HSC or Equivalent level or Mathematics or Statistic at the first year of the degree

			CAT OR Institute Level CE
	O::C Eligibility		 Graduate with 4 year U.0 Degree (Honours / Honou with Research) wi Specialization in concerne subject or equivale academic level 6.00 OR Graduate with four years U Degree program wi maximum credits require for award of Minor degree allowed to take up the Po graduate program in Min subject provided the stude has acquired the require number of credits a prescribed by the concerne Board of Studies.
3	Duration of program R:	A	1 Year
		В	2 Year 1 Year
4	R:Intake Capacity		30
5	R:Scheme of Examination		NEP 50% Internal 50% External Semester end Examination with Individual Passing in Internal and External Examination
6	R:Standard of Passing		40%
7	Credit Structure R: <u>SP-135A</u> R: <u>SP-135B</u>		Attached herewith
8	Semesters	Α	Semester I & II
		В	Semester I, II, III & IV
		1	

0	Program Academic Level	Α	6.0
9		В	6.5
		С	6.5
10	Pattern		Semester
11	Status		New
10	To be implemented from Academic Year	Α	2023-24
12	Progressively	В	-
		С	2027-28

Sign of the HoD Dr. Smita Shukla Alkesh Dinesh Mody Institute for Financial and Management Studies University of Mumbai Sign of the Offg. Associate Dean Dr. Ravikant Balkrishna Sangurde Faculty of Commerce Sign of the Offg. Associate Dean Prin. Kishori Bhagat Faculty of Management

Sign of the Offg. Dean Prof. Kavita Laghate Faculty of Commerce & Management

Based on Approved Syllabus Structure as per AC-07/07/2023 Item No. 6.35 (N)

R: <u>SP-135A</u>											
Year	Lev	Se		Majo	or		RM	OJT/FP	R	Cu	Degre
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			Quantitati	ін	2	tion	ogy				
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			Finance –			Basic					
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		Se	chain,			(OR)					
		111.1	Bitcoin			Basic					
			and			Accounting					
			Fintech			(OR)					
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Cum. C	Cum. Cr. For PG 28 8 4 4 - 44										
Diploma	in Fina	ance									

R: <u>SP-135B</u>											
Year	Leve I	Sem (2yr)		Мај	or		R M	OJT/F P	RP	Cum . Cr.	Degree
			4*2+2*3 Technical Analysis Derivatives	T H T H	2	4 Infrastructur e and Project Finance	-	-	Research Project 4	22	
		Se m III	Fixed Income Securities Global Portfolio Investment Analysis	THTH+PR	2	(OR) Mutual Fund					
(MSc - Financ	6.5		Entrepreneuri al Finance, Venture Capital and Private Equity 4*2+2*3	н Н 4	4						PG Degre e after
2	6.5	Se m IV	4*2+2*2 Mergers, Acquisitions and Corporate Restructuring Structured Finance Risk Management International Finance 4*2+2*2	T H T H T H	4 4 2 2	TH Emerging Trends in Environment al Accounting and Finance (OR) Wealth Managemen t (OR) Trading Strategies and Financial Models	-	-	Dissertatio n 6	22	3-yr UG or PG Degre e after 4-yr UG
Cum. C PG Di Fin	r. For ploma ance	1 Yr in	28			8	4	4	-	44	
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SEMESTER II

Two Years M.Sc. (Finance) Programme

Course Structure

F.Y. M.Sc. (Finance)

(Implemented from Academic Year- 2023-24)

No. of Courses	Semester II	Credits
1	Mandatory	
1(A)	Financial Modelling	02
1(B)	Econometrics	02
1(C)	Financial Markets and Institutions	02
1(D)	Behavioral Economics and Algorithmic Finance	04
1(E)	Corporate Finance	04
2	Electives (one)	
	Corporate Governance & Regulatory Environment (OR) Al and Data Science Techniques for Financial Decision making (OR) Actuarial Science	04
3	RM	
4	OJT/FP	
	OJT/FP OJT / Field Project in Financial Training / Awareness	04
5	RP	
	Total Credits	22

Financial Modelling (Mandatory Course - 2 Credits)

Course Outcomes:

- 1. Student should be able to understand various of Financial models
- 2. Student should be able to define and structure the financial problem for modelling
- 3. Student should be able to use Excel for structuring Financial Models for various desired financial outputs

Sr. No.	Modules	No. of Hours
1	Introduction to Financial Modelling, Excel Proficiency, Combining the Tools and Theory into the model	15
2	Project Finance Modelling, Equity Research Modelling	15
Total		30

Sr. No.	Modules / Units
1	Introduction to Financial Modelling, Excel Proficiency, Combining
	the Tools and Theory into the model, Financial Feasibility Model
	from Start to Finish
	Introduction to financial modes static vs dynamic models, need and
	applications.
	• Formatting of excel sheets, use of excel formulae function, data filter
	and sort, charts and graphs, table formula and scenario building,
	lookups, pivot tables.
	 Defining and structuring a problem, defining the input and output
	variables of the model, deciding users of the model, understanding
	the financial and mathematical aspects of the model, designing the
	model, creating the Spread sheet, testing the model, protecting the
	model, documenting and maintaining the model.

	Inputs - assumptions, intermediate statements, capital expenditure				
	statement, sources of finance and debt servicing, production, incom-				
	and expense statements, working capital statements, depreciation				
	schedule, loan amortization.				
	Outputs - profit and loss statement, balance sheet, cash flow, key				
	ratios, project IRR and equity IRR, payback, sensitivity analysis,				
	summary of key results to top management.				
2	Project Finance Modelling, Equity Research Modelling				
	• Building Project Finance Model: Inputs - sensitivity, cost of capital,				
	borrowing formats, other project costs; Output - preparing projected				
	financial statements including cash flow, evaluating project debt				
	capacity and cash flow waterfall, measuring expected rates of				
	return, sensitivity analysis.				
	Building Equity Research Model - Preparing income statement,				
	balance sheet, cash flow statement, geographic revenue sheet,				
	segment revenue sheet, cost statement, debt sheet, analysis of				
	revenue drivers, valuation – discounted cash flow method (DCF),				
	other models like relative valuation, preparing presentation sheets.				

Reference Books

- Alistair L. Day, Mastering Risk Modelling.
- Dr. Manu Sharma, Mergers and Acquisitions and Corporate Valuation- An Excel Based Approach.
- John D. Finnerty, Project Financing- Asset based financial Engineering.

Required Texts

- C. Sengupta, Financial Modelling using Excel and VBA
- Alastair L. Day, Mastering Financial Modelling in Microsoft Excel
- Simon Beninga, Financial Modelling

Econometrics (Major/ Mandatory Course - 2 Credits)

Course Outcomes:

- 1. Student should be able to understand concept of Econometric Model
- 2. Student should be able to solve basic two variable liner regression model based question
- 3. Student should be able to solve / use basic multivariate regression models
- 4. Student should be able to solve basic heteroscedasticity and autocorrelation

Sr. No.	Modules /			
	Units			
1	Introduction to Econometrics			
2	Time series data analysis, Times series regression model			

Sr. No.	Modules	No. of Hours
1	Introduction to Econometrics	
	 Definition of Econometrics – Steps in Empirical Economic Analysis - Econometric Model – The Role of Measurement in Economics – The Structure of Economic Data: Cross-Sectional data, Time Series data, Pooled Cross Section data, Panel Data. 	15
	 Two Variable Linear Regression Model: Assumptions, Estimation of Parameters, Tests of Significance and Properties of Estimators – Functional forms of Regression models 	
2	Time series data analysis, Times series regression model	
	 Multivariate regression - Regression, causality, and control; anatomy of multivariate regression coefficients; Omitted variables formula, short vs. long regressions; Dummy variables and interactions; Regression analysis of natural experiments, differences-in-differences 	15
	 Inference problems - heteroscedasticity and autocorrelation - Heteroscedasticity, 	

	Total	30
consequences of; weig linear probability mode series, consequences common-factor restric serial correlation	ghted least squares; the el; Serial correlation in time of; quasi-differencing; ion; Durbin-Watson test for	

Required Texts:

• Introductory Econometrics 4e by Wooldridge, J. South-Western Cengage Learning (2009).

Financial Markets and Institutions (Major/ Mandatory Course - 2 Credits)

Course Outcome:

- 1. Student should be able to decipher the overview and scope of financial markets in India
- 2. Student should be able to distinguish between various entities under Securities Market,
- 3. Students should be able to comprehend role of Banks, Non-bank financial institutions & International Financial Institutions.
- 4. Student should be able to express the role of regulatory agencies in Financial markets

Sr. No.	Modules	No. of Hours
1	Introduction	05
2	Securities Markets	05
3	Banks	05
4	Nonbank Financial Institutions	05
5	Regulatory bodies	05
6	International financial institutions	05
	Total	30

Sr. No.	Modules /					
	Units					
1	Introduction					
	Determination of Interest Rates					
	Interest Rates					
	Monetary Policy					
2	Securities Markets					

	Money Markets;
	Bond Markets;
	Mortgage Markets;
	Stock Markets;
	Foreign Exchange Markets;
	Derivative Securities Markets.
3	Banks
	Industry Overview;
	•commercial banks,
	•cooperative banks;
	 microfinance institutions
4	Non-Bank Financial Institutions
	 Lending Institutions; Finance Companies; NBFCs; Insurance Companies; Mutual Funds
5	Regulatory bodies
	 Self-Regulatory Organization (SROs), SEBI, RBI, IRDA.
6.	International financial institutions
	 Federal Reserve Bank (US) & Securities Exchange Commission and their impact on Global Financial Markets BIS IMF World bank (IFC,MIGA,IDA,IBRD)

Required Text:

• Financial Markets and Institutions by Bhole, Tata McGraw-Hill (2009).

Reference Text:

• Financial Markets and Institutions 4/e by Saunders and Cornett, McGraw-Hill (2009).

Behavioral Economics and Algorithmic Finance (Major/ Mandatory Course - 4 Credits)

Course Outcomes:

- 1. Student should be able to understand basics of Behavioral Economics
- 2. Student should be able to interpret the application Modelling of social preferences
- 3. Student should be able to explain the heuristic and biases under Behavioral Economics
- 4. Student should be able to decipher the Behavioral game theory
- 5. Student should be able to apply basic Cross Sectional Data Analysis

Sr. No.	Modules	No. of Hours
Behavioral Economics		
1	Introduction to behavioural economics	10
2	Foundation	10
3	Strategic interaction	10
Algorithmic Finance		
4	Introduction, Cross Sectional Data Analysis	30
	Total	60

Sr. No.	Modules / Units	
1	Introduction to behavioural economics	
	 What is behavioural economics? - History and evolution- relation with other disciplines objectives, and scope- themes and methodology of behavioural economics (theory, evidence, consilience) – application 	
2	Foundation	
		1 /

	Values, preferences and choice- believes- heuristic and biases- state dependent
	preferences (such as habit formation and addiction)- mis-prediction and
	projection bias-anticipation and information avoidance-decision making under risk
	and uncertainty- prospect theory- the role of reference- dependent preference in
	both risky (loss aversion) and risk free (endowment) choices mental accounting-
	applications
3	Strategic interaction
	Behavioural game theory (nature, equilibrium, mixed strategies, bargaining,
	iterated games, signalling, learning) - application Modelling of social preferences
	-nature and factors affecting social preferences distributional social preferences
	based on altruism, inequality aversion models- reciprocity models, evidence and
	policy implications
6.	Algorithmic Finance - Cross Sectional Data Analysis
	Concept of Cross-sectional data analysis as an important tool for financial
	analysis
	 Introduction to use of statistical software like R or Python to run regression
	analysis, correlation analysis, and other statistical tests to find meaningful insights
	from the data.
	 Introduction to use of Data visualization tools like Tableau or Power BI to create
	charts, graphs, and other visual representations of data.
	Regression and Classification algorithm applications in security analysis
	forecasting and prediction. Case Study examples
	 Introduction to use of Machine learning algorithms of neural network to predict a
	• Introduction to use of Machine learning algorithms of heural network to predict a
	late duction to use of Mashing lagrains algorithms to another time dependent
	Introduction to use or machine rearning algorithms to analyze time-dependent
	wata time series to identify trends and patterns in financial data (ARMA/ARIMA
	Supervised and Unsupervised learning algorithms.

Required Text:

- An introduction to behavioural economics by Wilkinson and Klaes, Palgrave McMillan
- Behavioural Economics and Finance, by Michelle Beddeley, Rutledge, 2019

- Behaviour economics and business ethics- interrelation and application by Alexander Rajko,
- Rutledge, London, 2012
- Philosophical problems of behavioural economics by Steffan Heidel, Routlege, 1996
- Varieties of modern economic rationality from Adam Smith to Contemporary
- Behavioural and evolutionary economists by Michael S Zoubulakis, Routledge, 1997,
- Behavioural foundations of economics by J.L. Buxter, McMillan Press, Choice, Behavioural economics and addiction, edited by Ruby E Vachinich and Nick Heather, Pergamon Elsevier, 2003,
- Advance in understanding strategic behaviour- game theory experiments and bounded rationality, edited by Steffan Huck, Palgrave, McMillan, 2004
- ALGORITHMIC FINANCE: A COMPANION TO DATA SCIENCE, by Ting Christopher Hian-Ann

Corporate Finance

(Major/ Mandatory Course - 4 Credits)

Course Outcomes:

- 1. Student should be able to understand Framework for Financial Decisions
- 2. Student should be able to decipher the connected concepts Risk, Required Return and Valuation
- 3. Student should be able to explain the Financing Decisions related to Capital Structuring
- 4. Student should be able to apply basic concepts of Corporate Finance related to Corporate Performance Management

Sr. No.	Modules	No. of Hours
1	Framework for Financial Decisions, Investment Decisions and Strategies	15
2	Value, Risk and the Required Return, Valuation	15
3	Financing and Policies, Strategic financial decisions	15
4	Corporate Performance Management, International Financial Management	15
	Total	60

Sr. No.	Modules /	
	Units	
1	Framework for Financial Decisions, Investment Decisions and Strategies	
	 An overview of financial decisions; the financial environment; bond and share valuation. Investment appraisal methods; project appraisal – applications; investment strategy and process. 	
2	Risk and the Required Return, Valuation	
	 Risk-Return Analysis in Investment Decisions – Measures of Risk and Return, understanding value of a firm, goals of a firm, cash flow discounting, making investment decisions, valuation of fixed income 	

	securities and common stocks, introduction to portfolio theory and asset
	pricing models (the capital asset pricing model; the required rate of
	return on investment; enterprise value and equity value), Cost of Capital.
	Conceptual framework of valuation; approaches and methods of
	valuation - asset-based approach, earnings based approach, discounted
	cash flow approach, market value based approach, relative valuation
	approach, real options approach, selection of approach; applications of
	valuation methods to valuation of different types of companies.
3	Financing and Policies, Strategic financial decisions
	Treasury management and working capital policy; short-term asset
	management; short - and medium-term finance
	Long-term finance; returning value to shareholders: the dividend
	decision; capital structure and the required return; relevance of capital
	structure; acquisitions and restructuring; Operating Leverage; Dividend
	Policy; Pricing Strategy; Asset Liability Management.
4	Corporate Performance Management, International Financial
	Management
	Execution Problem; Balanced Scorecard; Real-time Financial Systems:
	Corporate Performance Management (CPM); Integrated Financial
	Management
	Overview of market for foreign currencies; foreign exchange risks –
	transaction, translation, and economic risks; managing currency risk;
	foreign investment decisions.
1	

Required Text:

• Corporate Finance by Stephen A. Ross, Randolph Westerfield, Jeffrey Jaffe (2006), McGrawHill/Irwin.

Reference Text:

• Corporate Finance: Linking Theory to What Companies Do by John Graham, Scott B. Smart, William L. Megginson (2008), South Western Cengage Learning.

Corporate Governance & Regulatory Environment (Elective Course - 4 Credits) (Any One)

Course Outcomes:

- 1. Student should be able to understand Corporate Governance Framework in India
- 2. Student should be able to grasp basic legal framework of Capital Markets
- 3. Student should be able to comprehend important SEBI guidelines
- 4. Student should be able to comprehend Regulation of Mutual Funds

Sr. No.	Modules	No. of Hours
1	Corporate Governance	06
2	Shareholders and Stakeholders, Board of Directors	06
3	Audit Committee	06
4	Code of Corporate Governance	06
5	Economic Rationale of Financial Regulation	06
6	Legal Framework of Capital Markets	06
7	SEBI Regulations and Guidelines	06
8	Regulation of Mutual Funds	06
9	Overview of Regulatory Bodies	06
10	International Financial Regulation	06
	Total	60

Sr. No.	Modules /	
	Units	
1	Corporate Governance	
	Objectives; definitions and importance of corporate governance;	
	reputation, competition and corporate governance; corporate ethics;	
	corporate governance and corporate responsibility; globalization and	
	corporate governance; Models of corporate governance;	
	mechanisms of corporate governance	
2	Shareholders and Stakeholders, Board of Directors	
	Shareholder rights, equitable treatment, responsibilities of	
	shareholders, minority shareholders' protection, stakeholder	
	protection,	
	 Structure and independence of the board; responsibilities and 	
	duties of the board; selection, remuneration and evaluation of the	
	board; board committees; the board and the management.	
3	Audit Committee:	
	Organization of audit committee; responsibilities of the audit	
	committee; working with auditors and management.	
4	Code of Corporate Governance	
	SEBI Code of Corporate Governance (Narayan Murthy Committee	
	Report); Ministry of Finance (Nareshchandra Committee Report);	
	US Sarbanes-Oxley Act of 2002; The UK Corporate Responsibility	
	Act 2002	
5	Economic Rationale of Financial Regulation	
	Externalities; market imperfections and failures; economies of scale	
	in monitoring; moral hazard; mandatory versus voluntary disclosure;	
	regulation and competition; alternative approaches to regulation	
6	Legal Framework of Capital Markets	
	Securities Contracts (Regulation) Act, 1956 (As mended by Finance	
	Act 2021 and Securities Contracts (Regulation) Rules, 1957;	
	 Foreign Exchange Management Act (FEMA); Overview of relevant provisions of the Companies Act 2013 	

 Indian Stamp Act, Registration Act, Competition Act; Stock exchanges – trading rules, listing agreement, enforcement of listing compliances; Banking Regulation Act; Reserve Bank (Board for Financial Supervision (BFS) Regulations.
SEBI Regulations and Guidelines
 SEBI Act, 1992; SEBI (ICDR) Regulations; SEBI (Insider Trading) Regulations; SEBI (Substantial Acquisition of Shares and Take Over) Regulations; SEBI (Buyback of Securities) Regulations; SEB (Foreign Institutional Investors) Regulations.
Regulation of Mutual Funds
 SEBI (Mutual Funds) Regulations; taxation of a mutual fund - resident unit holders, non-resident individual unit holders, non- resident unit holders being a company; Regulation of Overseas Investment in the Domestic Mutual Fund Sector - Setting up an AMC, Investing via a Domestic Mutual Fund, Investing as a FII in a Indian mutual fund, role of self-regulatory organisations.
Overview of Regulatory Bodies
Reserve Bank of India, Securities Exchange Board of India, Insurance Regulatory Development Authority, Provident Fund Regulatory and Development Authority, Ministry of Finance, Ministr of Corporate Affairs, Registrar of Companies
International Financial Regulation
Challenges of international regulation of financial markets. Drief

Required Text:

- Corporate Governance by Robert A. G. Monks and Nell Minow (2011), Wiley.
- Company Law: Theory, Structure, & Operation by Cheffins (1997), Clarendon Press
- Global financial regulation by Howard Davies, David Green (2008) Polity Press.

Reference Books:

- Sebi Manual 16e Taxmann Publications Pvt. Ltd, 2011
- Foreign Exchange Management Manual Taxmann Publications Pvt. Ltd, 2011
- Perspectives in Company aw and Financial Regulation by Christoph Van der Elst, De Wulf, Michel
- Tison, Reinhard Steennot (2011), Cambridge University Press.

Al and Data Science Techniques for Financial Decision making (Elective Course - 4 Credits) (Any One)

Course Outcomes:

- 1. Student should be able to comprehend basics of Data Science
- 2. Student should be able to grasp basic Data Collection Strategies
- 3. Student should be able to do Model Development & Model Evaluation using tools of Data Science

Sr. No.	Modules	No. of Hours
1	Introduction to Data Science	15
2	Data Collection and Data Pre-Processing	15
3	Model Development	15
4	Model Evaluation	15
	Total	60

Sr. No.	Modules / Units	
1	Introduction to Data Science	
	 The derivative of a function; Rules of differentiation; Marginal functions; Optimization of economic functions; derivative of the exponential and natural logarithm functions; Indefinite integration; Definite integration. 	
2	Data Collection and Data Pre-Processing	
	Data Collection Strategies – Data Pre-Processing Overview – Data	
	Cleaning – Data Integration and Transformation – Data Reduction – Data	
	Discretization.	
3	Model Development	

	 Simple and Multiple Regression – Model Evaluation using Visualization – Residual Plot – Distribution Plot – Polynomial Regression and Pipelines – Measures for In-sample Evaluation – Prediction and Decision Making
4	Model Evaluation
	 Generalization Error – Out-of-Sample Evaluation Metrics – Cross Validation
	 Generalization Error – Out-of-Sample Evaluation Metrics – Cross Validation – Overfitting – Under Fitting and Model Selection – Prediction by using

Required Text:

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

(Elective Course - 4 Credits) (Any One)

Course Outcomes:

- 1. Student should be able to Summarise the main features of a data set (exploratory data analysis
- 2. Student should be able to define and use discrete random variable & continuous random variables
- 3. Student should be able to apply basics of Probability
- 4. Student should be able to apply concept of Simple and Compound Interest in business cases
- 5. Student should be able to apply basics of Differential Equations
- 6. Student should be able to apply Numerical Analysis concepts like Finite differences, Newton's forward difference, Backward Difference Operator, etc.

Modules at a Glance

Sr. No.	Modules	No. of Hours
1	Summarise the main features of a data set (exploratory data analysis)	05
2	Probability	05
3	Random variables	05
4	Simple and Compound Interest	05
5	Differential Equations	05
6	Numerical Analysis	05
	Total	60

Sr. No.	Modules / Units			
1	Main features of a data set (exploratory data analysis)			
	 Summarizing a set of data using a table or frequency distribution, and display it graphically using a line plot, a box plot, a bar chart, histogram, stem and leaf plot or another appropriate elementary device. Describing the level/location of a set of data using the mean, median, mode, as appropriate. 			
	Describing the spread/variability of a set of data using the standard deviation, range, interquartile range, as appropriate.			
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	 Defining symmetry and skewness for the distribution of a set of data.
2	Probability
	Set functions and sample spaces for an experiment and an event.
	 Probability as a set function on a collection of events and its basic properties. Calculating probabilities of events in simple situations Permutation and
Combination	
	• Deriving and using the addition rule for the probability of the union of two events.
	 Defining and calculating the conditional probability of one event given the occurrence of another event.
	 Deriving and using Bayes' theorem for events.
	• Defining independence for two events, and calculating probabilities in situations involving independence.
	Binomial Probability Distribution
	Poisson Probability Distribution
	Normal Probability Distribution
3	Random variables
	Defining discrete random variable, define the distribution function and the
	probability function of such a variable, and using these functions to calculate
	probabilities.
	probability density function of such a variable, and using these functions to
	calculate probabilities.
	• Defining the expected value of a function of a random variable, the mean, the
	variance, the standard deviation,
4	Simple and Compound Interest
	Interest compounded once a year,
	 more than once a year, continuous,
	nominal and effective rate of interest
	Annuity-Present and future value-
	 sinking funds Depreciation of Accests
	 Depreciation of Assets Equated Monthly Installments (EMI)- using flat interest rate and reducing balance
	method.
	Differential Equations
	Ordinary differential equations,
	Second-order differential equations,
	Partial differential equations
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6	Numerical Analysis		
	 Introduction and concept: Finite differences – forward difference operator – Newton's forward difference formula with simple examples • 		
	 Backward Difference Operator. Newton's backward interpolation formula with simple examples Runge Kutta method Euler's method 		

Reference Text:

- Numerical Analysis by S.S. Shastri
- Text Book of Differential Equations by Arun Kumar Sharma
- Statistical methods by S.P. Gupta

Annexure I Scheme of Examination and Standard of Passing

- (1) Each course will have two components of evaluation. Term work will have 50 per cent weightage for internal assessment. Semester-end written examination will have weight of 50 per cent.
- (2) The student shall obtain a minimum of 40 per cent marks in the internal assessment and 40 per cent marks in semester-end examination, separately.
- (3) The student will have to complete the summer project between semester II and III and submit the summer project report

Internal assessment

- (4) For internal assessment, a teacher may select a variety of procedures, such as:
 - (i) Short quizzes, viva, presentations; or
 - (ii) Assignments, seminars, practical journal work; or
 - (iii) Extension, field, experimental work; or
 - (iv) Research project by individual students or group of not more than five students; or
 - (v) Open book test, review of research papers or chapters from research publications; or
 - (vi) Periodical tests, case studies, online tests, or a combination of the these; or
 - (vii) Overall conduct as a responsible student, mannerism and exhibition of leadership qualities in organizing co-curricular activities and attendance.
- (5) The marks of the Internal Assessment shall not be disclosed to the students prior to the declaration of the Semester End results.
- (6) There shall be no marks assigned for attendance to the student. However, five marks for active participation and five marks for overall conduct are to be assigned based on the presence and participation of the learner during the lectures.

Semester-End Examination

- (7) Duration -The semester-end written examination will be of two hours.
- (8) Time All examinations will be held at the end of each semester and will be conducted by the University as per the existing norms.

Questions Paper Pattern -

There shall be five questions each of 10 marks and with internal option having not more than 15 marks. All questions shall be compulsory with internal choice within the questions.

Question No	Particular	Marks
0.1		40 Marka
Q-1	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	C. Full Length Question	
Q-2	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	
Q-3	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	
Q-4	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	
Q-5	Attempt Any 2	10 Marks
	a. Full Length Question	
	b. Full Length Question	
	c. Full Length Question	

Dissertation

- (9) The student has to prepare and submit a dissertation during the semester IV. The head of the Institute shall assign a guide to the student. The topic of the dissertation and the scope of work shall be approved by the guide and the head of the Institute, and the student shall work under the direct supervision of the guide.
- (10) The head of the Institute would appoint a two-member committee to assess the dissertation.
- (11) Viva voce will be conducted by a panel of two examiners appointed by the head of the institution.

Carry Forward of Marks

- (12) A student who passes the internal assessment but fails in the semester-end examination of the course shall reappear for the semester end examination of that course. However, the internal assessment marks shall be carried forward and the student shall be entitled for grade obtained by him/ her on passing.
- (13) A student who fails in the internal assessment but passes in the semester-end examination of the course shall resubmit and reappear for the internal assessment in the form of projects/ assignments of that course. However, the marks of semester-end examination shall be carried forward and the students shall be entitled for grade obtained by him/her on passing.
- (14) The evaluation of the student who fails in the internal assessment and reappears for the same shall consist of one project of 40 marks which will be divided into 20 marks for the documentation of the project, 10 marks for the presentation and 10 marks for the viva voce.

Allowed to Keep Term (ATKT)

- (15) A student shall be allowed to keep term for Semester II irrespective of the number of heads of failure on the semester I.
- (16) A student shall be allowed to keep term for semester III if:(i) the student passes each of semester I and semester II; or(ii) the student fails in not more than two courses of Semester I and Semester II taken together.
- (17) A student shall be allowed to keep term for Semester IV irrespective of the number of heads of failure on the Semester III. However, the student has to pass each of the Semester I and semester II and summer project, in order to appear for semester IV examination.
- (18) The results of semester IV shall be kept in abeyance until the student passes semester I, II, and III examinations, and the summer project.

Additional Examinations

(19) Additional Class Test or Assignment

The head of the institution may, on being satisfied that the student had remained absent on valid ground, allow him/ her to appear for one additional class test or assignment after complying with the necessary formalities.

(20) Additional Semester-End Examination

- (i) There will be one additional semester-end examination for Semester I, II, and, III, for students have failed or were absent.
- (ii) The additional semester-end examination for Semester I, II, and III, shall be held 20 days after the declaration of results but not later than 40 days.
- (21) The following student shall be eligible for appearing at the additional semester end examination:
 - A student who has remained absent in some or all the courses due to medical grounds or for representing the institute, college, or, university in sports, cultural, or similar activities; or
 - (ii) A student who has failed in some or all the courses; or
 - (iii) A student who was punished under 0.5050(12) (1) only (use of unfair means); or
 - (iv) A student who, for any other reason which is considered valid, under exceptional circumstances and to the satisfaction of the Principal or the Head of the Institution.

(22) <u>Conversion of Marks to Grades</u>

A 10 Grade Point Scale system will be followed. Each term work module will be evaluated in terms of marks first and then to letter grades as shown below:

Semester GPA/ Program CGPA Semester/ Program	% of Marks	Alpha-Sign/ Letter Grade Result
9.00-10.00	90.0-100	O (Outstanding)
8.00<9.00	80.00<90.00	A+ (Excellent)
7.00<8.00	70.00<80.00	A (Very Good)
6.00<7.00	60.00<70.00	B+ (Good)
5.50<6.00	55.00<60.00	B (Above average)
5.00<5.50	50.00<55.00	C (Average and Pass)
4.00<5.00	40.00<50.00	P (Pass)
Below 4.00	Below 40	F (Fail)
Ab (Absent)		Absent

(23) SGPA/ CGPA Calculation Semester Grade Point Average (SGPA)

The performance of a learner in a semester is indicated by a number called Semester Grade Point Average (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the learner during the Semester. For example, if a learner passes five courses (Theory/Projects etc.) in a semester with credits C1, C2, C3, C4 and C5 and learners grade points in these courses are G1, G2, G3, G4 and G5 respectively, then learners' SGPA is equal to:

SGPA (Si) =
$$[\underline{\sum Ci \times Gi}]$$

($\underline{\sum Ci}$)

Where, ci is the number of credits of the ith course and Gi is the grade points scored by the student in the ith course.

Cumulative Grade Point Average (CGPA)

An up to date assessment of the overall performance of a learner from the time s/he entered the University of Mumbai is obtained by calculating a number called the Cumulative Grade Point Average (CGPA), in a manner similar to the calculation of SGPA. The CGPA therefore considers all the courses mentioned in the curriculum/syllabus manual, towards the minimum requirement of the degree learner have enrolled for. The CGPA is calculated at the end of every semester to two decimal places and is indicated in semester grade report cards. The CGPA will reflect the failed status in case of F grade(s), till the course(s) is/are passed. When the course(s) is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA will only reflect the new grade and not the fail grades earned earlier.

Example: Up to semester r a learner has registered for n courses, among which s/he has "F" grade in Ith course. The semester grade report at the end of semester r therefore will contain a CGPA calculated as:

 $CGPA = [\underline{\Sigma Ci \times Si}]$ $(\underline{\Sigma Ci})$

Where Si is the SGPA of the ith semester and ci is the total number of credits in that semester.

M.Sc. (Finance)

Team for Creation of Syllabus

Name	College Name	Sign
Prof. Dr. Smita Shukla	Alkesh Dinesh Mody Institute for Financial and Management Studies	
Dr. Abhiraj Shivdas	Alkesh Dinesh Mody Institute for Financial and Management Studies	
Dr. Rakesh Malusare	Alkesh Dinesh Mody Institute for Financial and Management Studies	

Sign of HOD:	Sign of Dean:
Name of the Head: Prof. Dr. Smita Shukla	Name of the Dean: Prof. S. S. Garje
Name of the Department: Alkesh Dinesh	Name of the Faculty: Science and
Mody Institute for Financial and	Technology
Management Studies	

Appendix B

1	Necessity for Starting Course	The new program was necessary as per GR: dated 16 th May 2023
2	Whether the UGC has recommended the course:	It is as per UGC Guidelines
3	Whether all the courses have commenced from the academic year 2023-24	It will commenced from academic year 2023-24
4	The courses started by the University are self-financed, whether adequate number of eligible permanent faculties are available?	The department has eligible permanent faculty
5	To give details regarding the duration of the Course and is it possible to compress the course?	No, It is not possible to compress the course
6	The intake capacity of each course and no. of admissions given in the current academic year	30
7	Opportunities of Employability/ Employment available after undertaking these courses:	The course is Industry linked course and builds up employability

Justification for M.Sc. (Finance)

Sign of the HoD	Sign of the	Sign of the	Sign of the
Dr. Smita Shukla	Offg. Associate Dean	Offg. Associate	Offg. Dean
Alkesh Dinesh Mody	Dr. Ravikant	Dean	Prof. Kavita Laghate
Institute for	Balkrishna Sangurde	Prin. Kishori Bhagat	Faculty of
Financial and	Faculty of Commerce	Faculty of	Commerce &
Management Studies		Management	Management
University of Mumbai			