

Branch Name:	Management (Business Analytics)
Program Code:	MS301
Course Name:	Financial Analytics
Course Code:	2MS3010544T
Pre-requisite Course:	Financial Management

Course Objectives:

1. To equip students with the knowledge and application of financial analytics tools and techniques for decision-making.
2. To develop analytical skills in financial data management, forecasting, and investment analysis.
3. To apply statistical and machine learning techniques to financial problems such as risk management, portfolio optimization, and financial performance evaluation.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
4	-	-	4	60	40	-	-	100

Subject Contents:

Sr No.	Topic	Total Hours	Weightage (%)
1	Introduction to Financial Analytics: Overview of Financial Analytics: Scope and Applications, Financial Data Sources: Structured vs. Unstructured Data, Data Preprocessing and Cleaning Techniques in Finance, Role of Analytics in Financial Decision-Making, Financial Metrics and Key Performance Indicators (KPIs)	10	20
2	Financial Forecasting and Risk Management: Time Series Analysis and Forecasting Techniques, Regression Analysis in Financial Data, Risk Identification and Quantification, Monte Carlo Simulation for Risk Analysis, Scenario Analysis and Stress Testing	10	20
3	Investment Analytics and Portfolio Optimization: Introduction to Portfolio Theory, Asset Pricing Models: CAPM & Factor Models, Efficient Frontier and Risk-Return Tradeoff, Machine Learning in Portfolio Management, Performance Evaluation of Investment Strategies	10	20
4	Financial Statement Analysis and Corporate Valuation: Ratio Analysis and Financial Health Assessment, Predictive Modeling for Bankruptcy and Credit Risk, Discounted Cash Flow (DCF) Valuation, Market-Based Valuation Approaches (P/E, P/B, EV/EBITDA), Text Analytics in Financial Reports	10	20
5	Advanced Financial Analytics & Emerging Trends: Algorithmic Trading and High-Frequency Trading (HFT), Sentiment Analysis and Natural Language Processing in Finance, Blockchain and Cryptocurrency Analytics, Behavioral Finance and Big Data Applications, Case Studies and Industry Applications	08	20

Text Books:

1. "Financial Analytics with R: Building a Laptop Laboratory for Data Science" – *Mark J. Bennett*, Cambridge University Press
2. "Financial Forecasting, Analysis, and Modelling: A Framework for Long-Term Forecasting" – *Michael Samonas*, Publisher: Wiley
3. "Financial Statement Analysis and Security Valuation" – *Stephen Penman*, Publisher: McGraw-Hill Education

Reference Books:

1. "Valuation: Measuring and Managing the Value of Companies" – *McKinsey & Company (Tim Koller, Marc Goedhart, David Wessels)*, Publisher: Wiley
2. "Quantitative Investment Analysis" – *Richard A. DeFusco, Dennis W. McLeavey, Jerald E. Pinto, David E. Runkle*, Publisher: CFA Institute / Wiley
3. "Management and Financial Institutions" – *John C. Hull*, Publisher: Wiley
4. "Advances in Financial Machine Learning" – *Marcos López de Prado*, Publisher: Wiley
5. "Big Data and Machine Learning in Quantitative Investment" – *Tony Guida*, Publisher: Wiley

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand key financial analytics concepts and their application in financial decision-making.	Understand, Apply
CLO2	Apply data-driven approaches for financial forecasting and risk management.	Apply
CLO3	Utilize statistical models and machine learning techniques in financial analysis.	Understand, Apply, Evaluate
CLO4	Analyze financial statements and performance using advanced analytics tools.	Analyze
CLO5	Develop data-driven investment and financial planning strategies.	Create

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes (POs)								Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2
CLO1	H	H	H						H	
CLO2		H	M					M	H	H
CLO3			M			H		H	H	
CLO4	H	M	M						M	H
CLO5			M			H	H			M

H: High, M: Medium, L: Low
