

DSSEC356 Financial Analytics

Semester: V	Course Title: Financial Analytics	Credit:2
CourseCode: DSSEC356		(1 T + 1 P)

Course Outcomes: On successful completion of the course the learner will be able to

CO	COGNITIVE ABILITIES	COURSE OUTCOMES
CO1	REMEMBERING	Recall fundamental concepts, tools, and techniques used in financial analytics.
CO2	UNDERSTANDING	Explain financial data sources, key ratios, risk factors, and valuation metrics.
CO3	APPLYING	Apply statistical and machine learning methods for stock price prediction, risk analysis, and portfolio optimization.
CO4	ANALYSING	Analyze financial statements, time series data, and market behavior to derive insights.
CO5	EVALUATING	Evaluate investment opportunities, risk-return trade-offs, and predictive models for decision-making.
CO6	CREATING	Design financial dashboards and predictive models for investment, credit scoring, and risk management.

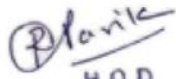
	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	1	1	-	-
CO2	2	2	-	1	-
CO3	1	2	2	-	-
CO4	1	2	3	2	1
CO5	1	2	3	1	1
CO6	1	2	3	2	2

Unit No.	Detailed Syllabus	Teaching Hours
I	Introduction to Financial Analytics - Financial Data Sources: Stock market data, company financial statements, and macroeconomic indicators. - Financial Ratios & Metrics: Liquidity, profitability, solvency, efficiency ratios. - Risk & Return Analytics: Volatility measures, Value at Risk (VaR), Sharpe ratio. - Time Series Forecasting: ARIMA, Exponential Smoothing, application to stock prices and returns. - Credit Risk Analytics: Credit scoring models and default prediction. - Challenges in Financial Analytics: Data quality, high-frequency data, and market anomalies.	15

II	Applied Financial Analytics & Case Studies • Portfolio Analytics: Diversification, CAPM, efficient frontier, portfolio optimization. • Predictive Modeling: Machine learning for stock price prediction and fraud detection. • Investment Analysis: NPV, IRR, and scenario analysis. • Financial Dash boarding: Creating dashboards using Excel, Tableau, or Power BI for financial KPIs. • Case Study & Mini Project (Compulsory): End-to-end financial analytics project using real/simulated data (data import → cleaning → analysis → prediction → dashboard/report).	15
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Suggested Reference Books

1. Applied Financial Analytics: The Right Data and the Right Models to Manage Risk – Michael Lovelady & Pamela Peterson Drake, Wiley, 2021.
2. Machine Learning for Asset Managers – Marcos López de Prado, Cambridge University Press, 2020.
3. Financial Analytics and Risk Management – Jimmy Skoglund & Wei Chen, Wiley, 2015.
4. Python for Finance: Mastering Data-Driven Finance – Yves Hilpisch, O'Reilly, 2018.


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