Weekly Schedule for Data Mining Project

Week 1: Environment Setup & Data Exploration (20 Hours)

The first week focuses on setting up the workspace, exploring the data schema, and cleaning raw data into a structured dataset.

Goal: Set up your programming environment, select your dataset, and understand its underlying structure.

Week 2: Data Preprocessing & Model Training (20 Hours)

The second week transitions from data preparation to exploratory data mining, focus algorithms, and pattern extraction.

Goal: Format your variables, divide your data, and train your first machine learning model.

Week 3: Evaluation, Optimization & Reporting (20 Hours)

The final week focuses on interpreting the discovered patterns, filtering out unhelpful rules, and finalizing academic project deliverables.

Goal: Measure your model's performance, optimize its settings, and compile your final project deliverables.

Weekly Schedule for Machine Learning Project:

Week 1: Environment Setup, Data Collection, and Data Preprocessing (20 Hours)

The first week focuses on configuring the workspace, loading the source data, and cleaning it into a usable format.

Goal: Establish a working coding environment and prepare a finalized spreadsheet format ((X) and (Y) for machine learning algorithms.

Week 2: Data Visualization, Splitting, and Model Training (20 Hours)

The second week transitions from data engineering to visual analysis and training a supervised machine learning algorithm.

Goal: Map structural patterns visually, segment data rows for validation, and train a basic machine learning classification or regression model.

Week 3: Model Evaluation, Parameter Tuning, and Documentation (20 Hours)

The final week validates the performance of the predictive model and packages the code into academic deliverables.

Goal: Benchmark system accuracy, optimize algorithmic parameters, and compile final project reports for evaluation.

3-weeks Internship Program: Financial Analysis of Listed Companies

Objective: To equip students with practical skills in reading financial statements, analyzing listed companies, performing ratio analysis, understanding valuation concepts, and preparing professional research reports.

Duration: 3 weeks

Target Audience: **B.Com, BBA, MBA (Finance), Accounts & Commerce Students**

Week 1: Introduction to Financial Statements, Profit & Loss Statement and Cash Flow Statement

- Introduction to Financial Analysis; Listed vs Unlisted Companies; Sources of Financial Data
- Understanding Annual Reports; Sections of Annual Report
- Introduction to Balance Sheet
- Assets: Current & Non-current
- Liabilities & Shareholders' Equity
- Practical Reading of Balance Sheet
- Structure of P&L Statement
- Revenue Recognition
- Operating Expenses
- EBITDA Concept and Practical Analysis of P&L
- Balance Sheet Analysis
- Why Cash Flow Matters
- Operating Cash Flow
- Investing Cash Flow
- Financing Cash Flow
- Cash Flow vs Profit
- Practical Cash Flow Analysis
- Daily Quiz & Weekly Assignment on Company Analysis

Week 2: and Financial Ratio Analysis, Working Capital & Business Analysis

- Introduction to Ratio Analysis
- Liquidity Ratios
- Solvency Ratios
- Profitability Ratios
- Efficiency Ratios
- Market Ratios and Ratio Analysis Assignment
- Working Capital Management
- Inventory Analysis
- Receivables Analysis
- Payables Analysis
- Cash Conversion Cycle
- Practical Case Study
- Daily Quiz & Weekly Assignment

Week 3: Industry & Competitive Analysis, Valuation Basics, Advanced Financial Analysis

- Understanding Industries
- Industry Life Cycle
- Competitor Analysis
- SWOT Analysis
- Porter's Five Forces
- Sector Comparison Exercise
- Introduction to Valuation
- Market Capitalization
- Enterprise Value
- P/E Ratio Analysis
- EV/EBITDA Analysis
- Price-to-Book Ratio
- DuPont Analysis
- Trend Analysis
- Common Size Statements
- Vertical Analysis
- Horizontal Analysis
- Financial Red Flags and Case Study Discussion
- Company Analysis Workshop
- Presentation Preparation and delivery
- Final Presentation & Viva

Daily Class Structure

20 Minutes – Daily Recap of Previous Session

120 Minutes – Concept Teaching

60 Minutes – Practical Demonstration using a Listed Company

40 Minutes – Q&A and Assignment Discussion

3-Weeks Internship Program: Credit Analysis in Indian Banking Industry

Objective: To equip students with practical knowledge and skills in credit appraisal, financial statement analysis, risk assessment, loan structuring, banking regulations, and credit decision-making processes followed in the Indian Banking Industry.

Duration: 3 Weeks

Target Audience: **B.Com, BBA, MBA (Finance), Banking & Finance, Commerce, Economics and Accounts Students**

Week 1: Fundamentals of Banking & Credit Assessment

- Structure of Indian Banking System
- Public Sector Banks vs Private Banks
- NBFCs and their Role
- Types of Banking Products
- Fundamentals of Lending
- Principles of Credit
- Credit Life Cycle
- Loan Origination Process
- Types of Borrowers
- Fund Based & Non-Fund Based Limits
- Working Capital Finance
- Term Loans
- Cash Credit & Overdraft Facilities
- Letter of Credit (LC)
- Bank Guarantees (BG)
- Introduction to Financial Statements
- Reading Balance Sheet, P&L and Cash Flow Statements
- Practical Case Study on Borrower Assessment
- Daily Quiz & Weekly Assignment

Week 2: Financial Analysis & Credit Appraisal

- Balance Sheet Analysis
- Profit & Loss Analysis
- Cash Flow Analysis
- EBITDA and Cash Profit
- Ratio Analysis for Credit Evaluation
- Liquidity Ratios
- Solvency Ratios
- Profitability Ratios
- Efficiency Ratios

- Debt Service Coverage Ratio (DSCR)
- Interest Coverage Ratio (ICR)
- Fixed Asset Coverage Ratio
- Working Capital Assessment
- CMA Data Preparation
- Fund Flow Analysis
- Cash Flow Projections
- Financial Spreading Techniques
- Credit Appraisal Note Preparation
- Practical Case Study on SME Borrower
- Daily Quiz & Weekly Assignment

Week 3: Risk Assessment, Loan Structuring & Credit Decision Making

- Understanding Credit Risk
- Business Risk Analysis
- Industry Risk Analysis
- Management Risk Assessment
- SWOT Analysis of Borrowers
- Banking Due Diligence
- CIBIL and Credit Information Reports
- Security & Collateral Evaluation
- Primary and Collateral Security
- Mortgage Concepts
- Charge Creation
- Loan Structuring Techniques
- Sanction Terms & Conditions
- Early Warning Signals (EWS)
- Red Flags in Credit Assessment
- NPA Identification & Monitoring
- RBI Prudential Norms
- Credit Monitoring Process
- Preparation of Credit Proposal
- Credit Committee Presentation
- Final Case Study Discussion
- Presentation Preparation & Delivery
- Final Presentation & Viva

Final Deliverables

- Credit Appraisal Report
- Financial Analysis Report
- Borrower Risk Assessment Report
- Credit Monitoring Checklist

- Loan Proposal Presentation
- Internship Completion Certificate

Daily Class Structure

- 20 Minutes – Daily Recap of Previous Session
- 120 Minutes – Concept Teaching
- 60 Minutes – Practical Demonstration using Real Borrower Case Studies
- 40 Minutes – Q&A and Assignment Discussion

3-Weeks Internship Program: Business Analytics Using Excel

Objective: To equip students with practical skills in data analysis, business reporting, dashboard creation, data visualization, and decision-making using Microsoft Excel.

Duration: 3 Weeks

Target Audience: **B.Com, BBA, MBA, BCA, Commerce, Management, Economics & Data Analytics Students**

Week 1: Excel Fundamentals, Data Handling & Data Cleaning

- Introduction to Business Analytics and Role of Excel in Business
- Excel Interface and Navigation
- Workbook and Worksheet Management
- Data Types and Formatting Techniques
- Data Entry Best Practices
- Sorting and Filtering Data
- Conditional Formatting
- Data Validation Techniques
- Text Functions (LEFT, RIGHT, MID, LEN, CONCAT, TEXT)
- Date and Time Functions
- Logical Functions (IF, IFS, AND, OR)
- Lookup Functions (VLOOKUP, HLOOKUP, XLOOKUP)
- Error Handling Functions
- Data Cleaning Techniques
- Removing Duplicates
- Handling Missing Values
- Practical Business Dataset Analysis
- Daily Quiz & Weekly Assignment

Week 2: Data Analysis, MIS Reporting & Dashboard Creation

- Introduction to Business KPIs
- Pivot Tables
- Pivot Charts
- Advanced Filtering
- Subtotal and Grouping Functions
- Data Summarization Techniques
- Sales Analysis Reports
- Customer Analysis Reports
- Inventory Analysis Reports
- Financial Performance Reports
- Trend Analysis

- Variance Analysis
- Introduction to Excel Dashboards
- Interactive Charts
- Slicers and Timeline Controls
- KPI Dashboard Development
- Business Reporting Best Practices
- Practical Case Study
- Daily Quiz & Weekly Assignment

Week 3: Advanced Analytics, Forecasting & Business Decision Making

- Introduction to Business Intelligence Concepts
- Scenario Analysis
- What-If Analysis
- Goal Seek
- Data Tables
- Solver Introduction
- Forecasting Techniques
- Trend Forecasting
- Moving Average Analysis
- Break-even Analysis
- Customer Segmentation Analysis
- Profitability Analysis
- Risk Analysis Using Excel
- Management Decision-Making Frameworks
- Business Analytics Case Study
- End-to-End Dashboard Project
- Presentation Preparation and Delivery
- Final Project Presentation & Viva

Final Deliverables

- Business Analytics Project Report
- Interactive Excel Dashboard
- MIS Reporting Workbook
- Business Insights Presentation
- Internship Completion Certificate

Daily Class Structure

- 20 Minutes – Daily Recap of Previous Session
- 120 Minutes – Concept Teaching
- 60 Minutes – Practical Demonstration Using Real Business Data
- 40 Minutes – Q&A and Assignment Discussion