



B.Com Honours

Semester IV

Calicut University

ADVANCED SPREADSHEET APPLICATIONS IN BUSINESS

Course Code: COM4FS112 • Module 4 Notes

Module IV: Advanced Financial & Statistical Analysis with Spreadsheets

Covers statistical functions, Analysis ToolPak, advanced financial functions (NPV, IRR, PMT), corporate capital budgeting modeling, and financial ratio dashboards.

Unit 19: Statistical Analysis – Descriptive Statistics & ToolPak

Functions: AVERAGE, MEDIAN, MODE.SNGL, STDEV.S, VAR.S. Running automated summary reports via Data → Data Analysis → Descriptive Statistics.

Unit 20: Inferential Statistics – T-Tests & Correlation ToolPak

Executing CORREL(array1, array2) and two-sample t-tests using Excel Data Analysis ToolPak.

Unit 21: Advanced Data Visualization Techniques

Specialized financial charts: Histograms, Box & Whisker plots, Waterfall charts (evaluating EBIT to Net Profit bridge), and Pareto Charts (80/20 inventory analysis).

Unit 22: Application of Financial Functions & Ratio Analysis

1. Financial Modeling Functions:

Net Present Value: $\text{=NPV}(\text{rate}, \text{value1}, \text{value2}...) - \text{Initial_Investment}$

Internal Rate of Return: $\text{=IRR}(\text{values}, [\text{guess}])$

Loan EMI Payment: $\text{=PMT}(\text{rate}/12, \text{nper}, -\text{pv})$

2. Financial Ratio Statements: Current Ratio, Debt-Equity, Net Profit Margin %, Return on Capital Employed (ROCE).

Practical Problem 2 (Capital Budgeting Financial Investment Evaluation Model): A corporate project requires Initial Capital Outlay = Rs. 5,00,000 at Year 0. Expected Annual Net Cash Inflows: Year 1 = Rs. 1,50,000; Year 2 = Rs. 2,00,000; Year 3 = Rs. 2,50,000; Year 4 = Rs. 1,50,000. Discount Rate = 10%.

Write exact Excel formulas and calculate (a) Net Present Value (NPV), (b) Internal Rate of Return (IRR), and (c) Monthly Loan EMI for financing Rs. 5,00,000 at 12% annual interest over 5 years (60 months) using PMT.

Capital Budgeting Excel Financial Model Statement:

Period (Col A)	Cash Flow Description (Col B)	Net Cash Flow Amount (Col C)	Present Value Factor @ 10%	Discounted Cash Flow (Rs.)
Year 0	Initial Capital Outlay	(5,00,000)	1.0000	(5,00,000.00)
Year 1	Operating Cash Inflow	1,50,000	0.9091	1,36,365.00
Year 2	Operating Cash Inflow	2,00,000	0.8264	1,65,280.00
Year 3	Operating Cash Inflow	2,50,000	0.7513	1,87,825.00
Year 4	Operating Cash Inflow	1,50,000	0.6830	1,02,450.00

Financial Function Output Results:

- 1. Net Present Value Formula:** $\text{=NPV}(10\%, C3:C6) + C2$
 NPV Output = $5,91,920 - 5,00,000 = \text{Rs. } 91,920.00$ (Project is financially viable!)
- 2. Internal Rate of Return Formula:** $\text{=IRR}(C2:C6)$
 IRR Output = 18.42% (Exceeds 10% hurdle rate!)
- 3. Monthly Loan EMI Payment Formula:** $\text{=PMT}(12\%/12, 60, -500000)$
 Monthly EMI = $\text{Rs. } 11,122.22$ per month

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