2.0   QUANTITATIVE ANALYSIS (3 HOURS)

AIM: To examine the candidate's understanding of the range of quantitative techniques and to demonstrate his ability in the application of these techniques in the analysis and interpretation of financial and related data for in the business decision making process.

Learning Outcomes:

Upon completion of this subject, the students should be able to:

- Describe and explain the concepts of mathematical and quantitative techniques;
- Explain the various types of data, the procedure of data collection and sampling methods;
- Apply the appropriate statistical approaches and procedures in business decision making;
- Interpret the statistical results of the statistical models including regression models.

SYLLABUS

2.1   Statistical Concepts and Practice

What is statistics?; Importance of collecting data; sources and types of data; elementary probability theory; expectation; probability; sampling methods; hypothesis test; regression analysis; descriptive statistics; ANOVA; chi-square test and the analysis of contingency tables; time series analysis; decision analysis.

2.2   Business Mathematics

Basic numeracy and arithmetic procedures; powers and roots; approximation; accuracy and errors; percentages; deflating a series; graph; use of graphs in break-even analysis; cost, revenue and profit functions, semi-log graphs and Z-charts.

2.3   Investment Appraisal

Simple and compound interest; discounting and the concept of net present value; annuities; methods of appraising investment; average annual return, payback method; discounted cash flow; internal rate of return.

2.4   Operations Research Techniques

Nature of operations research; linear programming; graphical solutions for maximisation and minimisation problems; sensitivity analysis; transportation and assignment problems; network analysis; shadow prices and uses; simulation and queuing theory.

RECOMMENDED READING LIST

1.0   Lucey, T. (2002), *Quantitative Techniques*, (6th edition), Thomson Learning.
2.0   Levine, D.M., Stephan, D., & Szabat, K. (2017), *Statistics for managers: Using Microsoft Excel*, (8th edition), Upper Saddle River, NJ: Pearson.
3.0   Keller, G. (2008), *Statistics for management and economics*, (8th edition), Sydney: Brooks/Cole.
4.0   Render, B. Stair, R.M., & Hanna, M. E. (2012), *Quantitative analysis for management,* (11th edition), Upper Saddle River, N.J: Pearson Prentice Hall.
5.0   Mann, P. S. & Lacke, C. J. (2011), *Introductory statistics*, (7th edition), Hoboken, NJ: John Wiley & Sons.