

**The Institute of Commercial Management**

**SUBJECT SYLLABUS**



**QUANTITATIVE METHODS FOR MANAGERS**

(04/07)

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**Data Presentation and Collection:**

- Frequency Distribution
- Frequency Tables
- Discrete or Continuous Data
- Histograms
- Frequency Polygon
- Frequency Curve
- Cumulative Frequency Curves
- Bar Charts and Pie Charts
- Lorenz Curve

**Central Location and Dispersion:**

- Notation
- Measures of Central Location
- Normal and Skewed Distribution
- Measures of Dispersion
- Coefficient of Variation

**Regression and Correlation:**

- Regression Analysis
- Correlation
- Spearman's Coefficient of Rank Correlation
- Multiple Regression

**Time Series and Forecasting:**

- Time Series Analysis
- Moving Average
- Finding the Trend
- Finding and Eliminating the Seasonal Variation
- Forecasting: Time Series
- Forecasting: Exponential Smoothing

**Probability:**

- Probability Calculations
- Mutually Exclusive Events: OR Rule
- Venn Diagrams: Events Not Mutually Exclusive
- Independent Events: AND Rule
- Conditional Probability
- Decision Trees
- Expected Value
- Permutations and Combinations

**Probability Distributions:**

- Normal Distribution
- Standard Normal Distribution
- Binomial Distribution
- Poisson Distribution

**Sampling and Tests of Hypotheses:**

- Types of Sample
- Distribution of Sample Means
- Central Limit Theorem
- Confidence Intervals
- Tests of Hypotheses: Principles
- Tests of Hypotheses: Practice
- Student Distribution

**Index Numbers:**

- Constructing an Index Number
- Weighted Aggregate Index Numbers
- The Laspeyres (Base-Weighted) Price Index
- The Paasche (Current-Weighted) Price Index
- The Laspeyres (Base-Weighted) Quantity Index
- The Paasche (Current-Weighted) Quantity Index
- Changing the Base Year
- Price and Quantity Relative Index Numbers
- The Retail Price Index (RPI)

**Time Value of Money:**

- Simple and Compound Interest
- Discounting and Present Value
- Investment Appraisal
- Depreciation
- Annuities and Other Financial Instruments

**Linear Programming and Break-Even Analysis:**

- Linear Programming
- Solving the Linear Programme: Maximisation
- Solving the Linear Programme: Minimisation
- Break-Even Analysis

**Calculus and Business Applications:**

- Differentiation
- Turning Points
- Rules for Differentiation
- Applications of Differentiation
- Partial Differentiation
- Integration

**Basic Mathematics:**

- Whole Numbers, Fractions and Decimals
- Rounding-Off
- Percentages and Ratio
- Powers and Roots
- Simple Algebra
- Solving Equations
- Simultaneous Equations
- Inequalities
- Graphs and Functions
- Progressions

**Reading List****Main Text:**

Quantitative Methods for Business & Economics, Second Edition – Glyn Burton, George Carrol, & Stuart Wall (Financial Times-Prentice Hall, ISBN 0-273-65570-1)

**Alternative Texts and Further Reading:**

Statistics for Marketing & Business – R Galloway (Stanley Thomas)

A First Course in Statistics – D Booth (DP Publications)