

QUANTITATIVE TECHNIQUES

Semester I
Code : QT01C05

Credit -4
Hrs – 90

Objectives

- . . To understand statistical tools for quantitative analysis
- . To understand the statistical tools for research and business decision making.

MODULE 1

Meaning of quantitative techniques, Classification of QT-application of QT in business, Industry and management-merits and limitations of QT.

(05 Hrs)

MODULE 2

Continuous probability distribution-Normal distribution characteristics- construction of normal curves-Standard normal curves-properties of standard normal curves-measurement of probability based on area under normal curve-Normal approximation to binomial distribution and poisson

(10 Hrs)

MODULE 3

Sampling theory and statistical inference-sampling and non sampling errors-statistic and parameter-sampling distribution-standard error point estimate-interval estimate-statistical inference-test of hypotheses-procedure- type 1 error-type 11 error-Z Test, t Test features-application-Z/t test for population mean and sample mean interpretation with hypothesis-confidence limit for population mean two sample mean-test for sample proportion and population proportion-confidence limit for population proportion-two sample proportion-paired t test-testing difference between observed value and expected value and expected value of X-two sample proportion of heterogeneous population-combined mean test-test for population standard deviation and sample standard deviation-test for two sample standard deviation-testing significance of difference between two sample means when samples are correlated-testing significance of correlation coefficient- z transformation.

(40 Hrs)

MODULE 4

- F test-ANOVA-one way, two way-latin square technique
- Non- parametric test-Chi-square test-Sign test-Run test-Mann Whitney U test-Kruskal wallis H test
- Association of attributes-consistency of data-association and disassociation-methods to study association-comparison of actual and observed frequency-comparison of actual and observed frequency comparison of proportion and products-Yule's co-efficient of association-co-efficient of Colligation-co-efficient of contingency.

(25 Hrs)

MODULE 5

Statistical Quality Control – Techniques of SQC – Control charts – Control charts for variables – X chart, R chart – Control chart for attributes p chart, np – chart and c chart.

(10 Hrs)

REFERENCE BOOKS

- Quantitative techniques for statistical decision making, Digambar Patri & Priyambada Patri.*
- Statistics for Management, Richard Levin, Printice Hall, India.*
- Quantitative methods and OR, Reddy & Appanayya, Himalaya Publishing House*
- Statistical methods for Research, Prof. K.Kalyanaraman, Printice Hall, India.*
- Statistical Methods, SP, Gupta*

6. *Fundamentals of statistics, D.N.Elhance.*
7. *Quantitative Techniques, CR. Kothari*
8. *Quantitative methods, D.R.Agarwal.*