

Veer Narmad South Gujarat University

406 - Quantitative Techniques for Management

Course	406
Course Title	Quantitative Techniques for Management
Credit	4
Teaching per Week	4
Review / Revision	June, 2022
Minimum weeks / Semester	15 (Lectures, Guest Lectures, Case Study, Presentations, Group Assignments)
Medium of Instruction	English
Purpose of Course	<ul style="list-style-type: none"> The course emphasizes Statistics to solve Business and Management problems
Course Objective	<ul style="list-style-type: none"> To familiarize students with the concepts of statistics and make them aware that how these techniques are applicable and used in the field of business management
Course Outcome	<ul style="list-style-type: none"> Students will become capable to apply statistical techniques in business, Management and Finance
Course Content	
<p>Unit 1: Probability and Probability Distributions (25%)</p> <ul style="list-style-type: none"> Definition of Random Variable, Discrete Random Variables and Continuous Random Variables, Probability Distributions: Discrete - Meaning of Probability Distribution, Discrete Probability Distributions, Binomial Distribution (definition properties and practical examples) Poisson Distribution (definition properties and practical examples) Probability Distribution: Continuous - Continuous Probability Distribution, Probability Density Function, Normal Distribution: definition of Normal Distribution its properties and practical examples. 	
<p>Unit 2: Hypothesis Testing: large Sample Tests (20%)</p> <ul style="list-style-type: none"> Basic concepts: Hypothesis, Null Hypothesis, Alternative Hypothesis, Statistic, Parameter, Sampling Distribution, Standard Error, Type I and Type II errors, Level of Significance, Degree of Freedom, Acceptance Region, Critical Region Testing of Hypothesis, Testing Procedure Large Sample Tests: test for specific mean, test for differences between mean, test for differences between S.D. 	
<p>Unit 3: Hypothesis Testing: Small Sample Tests (30%)</p> <ul style="list-style-type: none"> t Test: Test of Mean, Test of difference between means(independent samples), Paired t-test F Test: Test of significance of difference between two variances, Analysis Of Variance test One way and Two way classification Chi Square (χ^2): Test for independence of attributes (2×2 contingency table only), Yates's correction of continuity. 	
<p>Unit 4: Statistical Quality Control (SQC) (25%)</p> <ul style="list-style-type: none"> Meaning of SQC, types of variations, theory of runs, Basic theory of control charts, types of control charts. 	

- Control chart for variables: construction of control chart for mean and range and interpretation from control chart.
- Control chart for attributes: construction and interpretation from np (number of defectives) and C (number of defects) chart

Suggested Reading:

1. Fundamentals of Statistics: S.C.Gupta
2. Statistics for Management: Richard I. Levin and David S.Rubin
3. Complete Business Statistics : Amir D. Aczel and Jayavel Sounder pandian
4. Statistics for Management: Anand Sharma 5. Statistics for Business and Economic : R P Hooda
5. Grant. E.L Statistical Quality Control ; Mc Graw Hill Books Co.