

Gujarat University
Choice Based Credit System (CBCS)
Syllabus for B.Com Semester V (Statistics)
Effective from June 2013
CC 305

Fundamental Statistics - III

HOURS: 3/WEEK

CREDIT: 3

EXAM HRS: 3

Objective: - Students should be aware with the basics of advanced mathematical statistics.

1. Discrete Probability Distributions -1: [25%]

definition of probability distributions and distribution function, Probability mass function of Poisson distribution, It's properties and applications, Numerical examples, Probability mass function of Hyper-geometric distribution, properties and simple applications based on it. (without any mathematical proofs).

2. Discrete Probability Distributions -2: [25%]

Probability mass function of Negative Binomial distribution Its properties and applications, Numerical examples and Geometric distribution, simple applications and their properties and simple examples based on it

3. Process Control Technique: [25%]

Meaning of quality control and its uses in industry, Variations in quality, Theory of control chart, revised control chart, Theory of run, Control charts for variables (\bar{x} and R) and its examples, Control charts for attributes (np for fixed sample size, p and c) (No derivation of control limits), Examples related to the charts.

4. Product Control Technique: [25%]

Meaning of product control and its advantages, Definition of Single sampling plan, Explanation of the terms AQL, LTPD, Producer's risk, Consumer's risk, O.C function, ASN, ATI, AOQ, Simple examples based on Binomial, Hyper-geometric and Poisson distributions

References Books:

- (1) Grant E.L.: Statistical Quality Control, McGraw Hill.
- (2) Duncan A.J.: Quality Control and Industrial Statistics. Taraporewalaand Sons.
- (3) Levin and Rubin: "Statistics for Management", Prentice Hall of India Pvt. Ltd. New Delhi
- (4) Sancheti & Kapoor : Business Statistics. Sultan Chand & Sons, New Delhi.
- (5) Sancheti & Kapoor : Business Mathematics, Sultan Chand Sons, New Delhi.

Gujarat University
Choice Based Credit System (CBCS)
Syllabus for B.Com Semester VI (Statistics)
Effective from June 2013
CC 310

Fundamental Statistics - IV

HOURS: 3/WEEK

CREDIT: 3

EXAM HRS: 3

Objective: - Students should be competent to apply the statistical techniques in various fields.

1. Decision Theory: [25%]

Meaning of decision theory and its basic terminologies, Methods of solving decision problem (i) Decision under uncertainty- Maxi-max, Maxi-min, Hurwicz, Laplace. (ii) Decision under certainty when events probabilities are known – EMV, EVPI simple examples and their interpretations.

2. Time Series: [25%]

Meaning and uses of time series, Various components of time series, determination of trend by using graphical, moving average and least square method, To separate seasonal component by using moving average method, with examples.

3. Index Numbers: [25%]

Definition, limitations, characteristics, and uses of index numbers, Construction of whole sale price index number and cost of living index number, Construction of index number by using aggregate expenditure method and family budget method using Laspeyre's, Paasche's, Fisher's, Time Reversal Test (TRT) and Factor Reversal Test (FRT) and to test various formulas for TRT & FRT, Simple examples.

4. Testing of Hypothesis : [25%]

Meaning of statistical hypothesis, Definitions of Null hypothesis, Alternate hypothesis, Simple and Composite hypothesis, Critical region, Type-I and Type-II errors, Level of significance, Power of tests, One tailed and Two tailed tests, Examples of finding α , β and power of tests by using Binomial and Poisson distributions.

Reference Books:

- (1) Goon. Gupta, Dasgupta : "An outline of Statistical Theory" Vol-1 and II. World Press.
- (2) Sancheti & Kapoor: Business Statistics, Sultan Chand & Sons, New Delhi.
- (3) Sancheti & Kapoor: Business Mathematics, Sultan Chand & -Sons, New Delhi.
- (4) Mukhopadhyay, P. Mathematical Statistics, New Central Book, Agency, Calcutta.
- (5) Kapoor V. K. : Business Mathematics; Sultan Chand & Sons, New Delhi.