

**SHRI GOVIND GURU UNIVERSITY**

**B.Com SYLLABUS**

**(IN EFFECT FROM JUNE 2018 TILL FURTHER NOTIFICATION)**

**SEMESTER - V**

**SUBJECT : FUNDAMENTAL STATISTICS-III CC305**

**Unit 1 : Integration and its application** (25%)

Definition of Integration, Rules of integration (For constants and addition as well as subtraction rule). Simple sums on the basis of rules of integration and standard functions like  $x^n$ ,  $(ax + b)^n$ ,  $a^x$ ,  $a^{mx + n}$ ,  $1/(ax + b)$ ,  $e^{ax + b}$ . Definition and properties of definite integration and its uses (for Total Revenue, Total Cost and Profit from Marginal Revenue and Marginal Cost and sums on the basis of the same)

**Unit 2 : Poisson Distribution and Hypergeometric Distribution** (25%)

Meaning and Probability mass function of Poisson distribution. Its properties (without proof) and uses. Simple related sums.

Meaning and Probability mass function of Hypergeometric Distribution. Its properties (without proof) and uses. Simple related sums.

**Unit 3 : Process Control Technique (Statistical Quality Control)** (25%)

Meaning of Quality and Quality Control and its uses in Industry – variation in quality – principle of control chart – Process Control Limits, Revised Control Limits, Run Theory, Variable Charts ( $\bar{x}$  and R) and their sums, Attribute Charts (control limits without proof). Sums of attribute charts (For constant sample size np, p and c chart). Difference between Variable Chart & Attribute Charts.

**Unit 4 : Lot Control Technique (Acceptance Sampling)** (25%)

Meaning of Lot (Product) Control and its uses. Single Sampling Plan, AQL, LTPD, Producer's Risk, Consumer's Risk, Operating Characteristic Curve, ASN, ATI and AOQ. Simple sums on the basis of Hypergeometric Distribution and Poisson Distribution only.

**References Books:**

- (1) Grant E.L.: Statistical Quality Control, McGraw Hill.
- (2) Duncan A.J.: Quality Control and Industrial Statistics. Taraporewala and 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.

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**(IN EFFECT FROM JUNE 2018 TILL FURTHER NOTIFICATION)**

**SEMESTER - VI**

**SUBJECT : FUNDAMENTAL STATISTICS-IV CC-310**

**Unit 1 : Testing of Hypothesis & Large Sample Test (25%)**

Idea of Parameter and Statistic, Meaning of Statistical Hypothesis and its types, Standard error of statistics and its uses in testing of Hypothesis, Type-I and Type-II errors, Power of the test, Level of significance and Level of confidence, Critical region , One tailed test and two tailed test (Theoretical explanation only), Test of significance for mean, Test for difference between two means, Test for proportion of an Attribute, Test for difference of two proportions and sums related to standard error and above four tests only.

**Unit 2 : Decision Theory (25%)**

Meaning and importance of Decision theory, components of decision theory, different methods of taking decision, Maxi-Min Principle, Maxi-Max Principle, Laplace's Principle, Horwitz's Rule, EMV (Expected Monetary Value), EPPI and EVPI and sums related to above all.

**Unit 3 : Game Theory (25%)**

Meaning of game, two person zero sum game and its assumptions, Strategy and Pay-off matrix for two person zero sum game, saddle point, pure strategy, value of the game, mixed strategy, Dominance principle for solving the game without saddle point, reduction of  $m \times n$  pay off matrix into  $2 \times 2$  matrix using dominance principle and solving the game, simple sums of game theory problem with saddle point and without saddle point using dominance principle only.

**Unit 4 : Matrix Algebra (25%)**

Definition of matrix and different types of matrices, addition, subtraction and multiplication of matrices, determinant of square matrix (upto order of  $3 \times 3$ ), Adjoint matrix, Inverse matrix of a square matrix (upto order  $3 \times 3$ ), Solution of linear equations (Upto 3 Variables) with the help of inverse matrix and related examples.

**Reference Books:**

1. H.A.Taha, Operations. Research, Macmillan Publishing Co. Inc.
2. Vohra N.D, Quantitative Techniques in Management Tata McGraw Hill, New Delhi.
3. J.K.Sharma : O.R. Theory and Applications, Macmillan India Ltd.
4. Anderson, Sweeney, Williams, An Introduction to Management Science Quantitative Approach to Decision Making, Cengage Learning India Pvt. Ltd. New Delhi.
5. Barry Render, Ralph M. Stair , Michael E. Hanna, Quantitative Analysis for Management, Pearson Education(Singapore) Pte. Ltd.