College of Engineering Pune
(An Autonomous Institute of Government of Maharashtra, Pune-411005)
Department of Mathematics
(BP 15013) Statistical & Quantative Methods in Planning I

F.Y. B. Planning Semester I

Teaching Scheme
Lectures : 2 hrs / week
Tutorial : 1hr / week

Examination Scheme
Internal Test 1: 20 marks
Internal Test 2: 20 marks
End Sem. Exam: 60 marks

Unit I : Organizing Data

Collection, classification and tabulation of data; Diagrammatic and graphic representation of data. **[08 Hrs]**

Unit II : Measures of Central Tendency and Dispersion

Simple and weighted mean mode, median, harmonic and geometric mean; Variance and standard deviation; Coefficient of variation. **[08 Hrs]**

Unit III : Sampling

Statistic and parameters; Types of sampling; Different types of random sampling; Sample size; Sample size and standard error. **[06 Hrs]**

Unit IV : Index Number

Construction of index number: simple and weighted index; Factor reversal test and time reversal test; Cost of living index number. **[06 Hrs]**

Text Book :

- Statistical Methods by S.P. Gupta, Sultan Chand and Sons, (Latest Edition)

Reference Books :

1. Problems and Solutions in Statistics by V.K. Kapoor and S.C. Gupta, Sultan Chand Publications.
2. Applied Statistics by V.K. Kapoor, Sultan Chand Publications.
3. Theory and Problems of Statistics- Schuam Series by M.R. Spiesel, Mc. Graw Hill Publications.
4. Fundamental of Statistics by S.K. Gupta, Himalaya Publications.
5. Statistics of Management by Rubin Levin, Prentice Hall Publications.

6. The practice of Business Statistics by Manish Sharma and Amit Gupta, Khanna Publishing Company Private Limited, New Delhi.

Outcomes : Students will be able to

1. **distinguish** between different measures of central tendency and dispersion, **tell** types of sampling, **define** index number.
2. **understand** the need for collecting, organizing and classifying data, **compare** different types of random sampling.
3. **represent** data using diagrams and graphs, **calculate** mean, median, mode, variance, and coefficient of variation.
4. **calculate** sample size and standard error, **construct** index number, **apply** factor reversal and time reversal tests.
5. **apply** statistical techniques to problems in planning including case studies.

Note 1 :

- To measure CO1, questions may be of the type- define, identify, state, match, list, name etc.
- To measure CO2, questions may be of the type- explain, describe, illustrate, evaluate, give examples, compute etc.
- To measure CO3, questions will be based on applications of core concepts.
- To measure CO4, questions may be of the type- true/false with justification, theoretical fill in the blanks, theoretical problems, prove implications or corollaries of theorems, etc.
- To measure CO5, some questions may be based on self-study topics and also comprehension of unseen passages.

Note 2 :

All the Course outcomes 1 to 3 will be judged by 75% of the questions and outcomes 4 and 5 will be judged by 25 % of questions.