Course: OE
Statistics for Computer Applications

Semester: I	Credits: 2	Subject Code: OE1-12309	Lectures: 30

Course Outcomes:

At the end of this course, the learner will be able to:

- CO1-Identify, assess and execute oneself effectively in a broad range of analytic, scientific, government, financial, health, technical and other positions.
- CO2-Remember, determine, relate and evaluate the connections between theory and applications.
- CO3-Recall and apply probabilistic foundations of statistical inference in business world and decision making.
- CO4-Define, validate, compose Simulation Models thus helping learner solve the Programming Problems in Operations Research.

Unit 1: Introduction and Probability	15

- Definition of Statistics, Scope of Statistics in various other subjects. Concept of raw data, attributes, variables, population, sample, statistical error (residual), real life applications. Methods of Sampling- Probabilistic and Non-Probabilistic.
- Concept of Random Experiment, Outcome, Event, Sample Space, Mutually Exclusive, Exhaustive, Equally Likely, Trial, Tree Diagram.
- Classical Definition of Probability, Axioms of Probability, Impossible and Certain events.
- Theorems of Probability – i) Theorem of Total Probability or Addition Theorem for two and three events ii) Theorem of Compound Probability or Multiplication Theorem for two events. Conditional Probability and Independent Events.
- Numerical Problems
- Assignment: Internal Assessment

Unit 2: Simulation Techniques & Game Theory	15

- Introduction to Simulation, Meaning and Concept of Simulation, Merits and Demerits.
- Random Numbers- Definition, Uses, Requisites of a Good Random Number Generator.
- Monte Carlo Simulation.
- Introduction to Game Theory, Terminology
- Pure Strategy Game Theory, Mixed Strategy Game Theory, Principle of Dominance, Limitations of Game Theory

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- Numerical Problems.

Recommended Text Books:

- Dr. Teltumbade Ganesh, Barve Vishal Punjaram, *Business Statistics*, Thakur Publications, Pune, 2019
- Dr. Patil Vaishali V, Prof Jadhav Pratibha V, *Elements of Statistics*, Thakur Publishers Pune, 2013-14
- Saha Suranjan, *Basic Business Mathematics and Statistics*, New Central, Calcutta, 1994
- Agarwal B L, *Basic Statistics*, Wiley Publication, 1988
- Hodges J L, Lehmann E L, *Basic Concept of Probability and Statistics*, Vakil's Publication, 1972

Reference Books:

- Gupta S.P., *Statistical Methods*, Sultan Chand,2005
- Levin Richard I and Rubin David S, *Statistics for Management*, Prentice Hall of India,1997
- Gupta S.P, and Gupta M. P., *Business Statistics*, Sultan Chand,2008
- Chitale Ranjeet, *Statistical and Quantitative Methods*, Nirali Prakashan,2009
- Saha S and Mukherji S., *Quantitative Methods (Mathematical, statistical & Economic Techniques),* Central's ICWA
- Black Ken, *Applied Business Statistics: Making Better Business Decisions*, Wiley India, New Delhi, 2012
- Beri G C, *Business Statistics,* Tata McGrawHill, New Delhi, 2010
- Bakshi Sandeep Kumar, *Business Statistics*, A. K. Publication, 2010

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Faculty	Prof. Geetika Bhati	13.4.24
Subject Expert (Outside SPPU)	Dr. Avinash Patil	
Subject Expert (Outside SPPU)	Dr. Prashant Malavadkar	13.4.24
VC Nominee (SPPU)	Dr. Manish Agalave	13.4.24
Industry Expert	Ms. Amruta Patil	13.4.24
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