

Course: OE
Statistics for Computer Applications

Semester: I	Credits: 2	Subject Code: OE1-12309	Lectures: 30
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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
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • 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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Chairperson (HoD)	Mathematics and Statistics	Dr. Deepa Krishnamurthy	<i>Deepa</i> 13/4/24

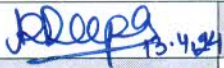
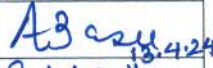
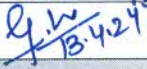


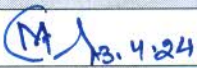
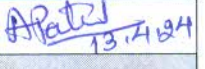

- Numerical Problems.

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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