DEPARTMENT OF STATISTICS				*CLASS: I M.Sc. Statistics*				
Sem	**Course Type**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/week**	**CIA**	**Ext**	**Total**
I	Practical – 1	21P1SMP1	Statistical Practical – I	2	4	50	50	100

Nature of Course				
Knowledge and skill	✓		Employability oriented	✓
Skill oriented	✓		Entrepreneurship oriented	

Description	Hours	K-Level	CLO(s)
Distribution Theory Fitting of Distributions	5	K2	1
Operation Techniques Sensitivity Analysis and parametric Programming. Variation in cost vector C. Variation in requirement vector B. Addition of single variable. Deletion of single variable	15	K3	2
Parameterization of the cost vector C. Parameterization of the requirement vector B. Non-Linear Programming Problem: Kuhn-Tucker conditions. All Integer Programming using omory's constraint.	15	K3	3
Inventory Control exercises.	10	K4	4
Queueing Models	15	K4	5

Books for reference:

1. Rohatgi, V.K. and Saleh, A.K.MD.E. (2011) An Introduction to Probability and Statistics, Wiley, New Delhi.
2. Johnson, N. L., Kotz, S., and Balakrishnan, N. (2004).Continuous Univariate Distributions.Vol.I, John Wiley and Sons (Asia), Singapore.
3. Johnson, N.L Kotz, S. and Balakrishnan, N. (2014) Continuous Univariate Distributions, Vol. II.Wiley , Singapore.
4. Mukhopadhyay, P, (2002), Mathematical Statistics, Book and Allied Publishers, New Delhi.
5. Mood, A.M., Graybill, F.A., and Boes, D.C, (1974), Introduction to the Theory of Statistics, Third Edition, McGraw-Hill International Edition.
6. Gass, S.I. (1985) Linear Programming, Methods and Applications.Courier Dover, New York.
7. Gupta, P.K. and Man Mohan. (1979) Operations Research: Linear Programming and Theory of Games,3/e, Sultan Chand &Sons, New Delhi.
8. Taha, H.A .(2011) Operations Research- An Introduction.9/e,. Prentice Hall, New Delhi.
9. Rao S.S. (1972), Optimization: Theory and Applications, Wiley Eastern (P) Ltd., New Delhi

Web references:

1. Basic probability distributions
   https://www.cse.iitk.ac.in/users/piyush/courses/pml_fall17/material/probabilty_tutorial.pdf
2. Continuous Distribution
   http://www.utstat.utoronto.ca/~radford/sta247.F11/IPSUR6.pdf
3. Linear Programming Simple, Transportation and Assignment Problems:
   http://www.phpsimplex.com/en/simplex_method_example.htm
   https://www.youtube.com/watch?v=-YBlR1UF-UY
4. Sensitivity analysis:
   https://www.youtube.com/watch?v=DNZpiOCdC6w
   http://web.mit.edu/15.053/www/AMP-Chapter-03.pdf
5. Inventory models
   http://ecoursesonline.iasri.res.in/mod/resource/view.php?id=90023
   https://www.youtube.com/watch?v=y2m3-dgtWG0
6. Queuing theory:
   http://ecoursesonline.iasri.res.in/mod/page/view.php?id=2969
   https://www.youtube.com/watch?v=7EB5A3Iv-xk

Rationale for Nature of the course

This course helps the students to learn the Resource Techniques with real time problems

Activities having direct bearing on Skill development / Employability / Entrepreneurship

Problem solving session using calculator will be conducted. Interpretation on the data and its analysis will be focused lot with real time problems.

Pedagogy :

Chalk and talk, Calculator

Course Learning Outcomes (CLOs)

On the successful completion of the course, students will be able to

CLOs	Course Learning Outcomes	Knowledge level
CLO1	Identify the type of statistical situation to which different distributions can be applied.	Up to K2
CLO2	Acquire knowledge of various discrete and continuous probability distributions and their applications in real life problems.	Up to K3
CLO3	Capability to develop non-linear programming problems.	Up to K3
CLO4	Explains various cost related to inventory models and develop, extent various deterministic inventory problems to analysis real world systems.	Up to K4
CLO5	Deep understanding of the theoretical background of queuing systems, apply and extend queuing models to analyse real world systems.	Up to K4

Mapping of CLO's with PSOs

#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CLO1	2	1	3	3	3		1
CLO2	2	1	3	3	3	1	1
CLO3	1	2	1	2		2	2
CLO4	1	2	2	2		2	3
CLO5	2	2	2	2	2	1	2

Advance application– 3; Intermediate level–2; Basic level–1

Course Designer

1. Dr.A. Saburnnisa
2. Dr.P. Vetri Selvi