

College of IT and Management Education

Lesson Plan

Subject : Quantitative Techniques II(MCC405)
Branch : MCA
Semester : 5th (July,2016- December,2016)
Faculty Name : Rajalaxmi Mishra
Credit Points : 3

Sl. No.	Topic	Session
Module – II		14 Hours
1	Introduction	1
2	Random numbers, pseudo random number generation	2
3	Using random numbers to evaluate integrals	1
4	Generation of discrete random variables, Inverse transform method	1
5	Generating Poisson and Binomial random variable, the acceptance-rejection technique	1
6	Generating Continuous random variables: the inverse transform algorithm	1
7	The rejection method, the polar method for generating normal random variables, generating Poisson process	1
8	Discrete event simulation approach, simulation via discrete event	1
9	The Single server queuing system	1
10	Queuing system with two servers in series and with two parallel servers	1
11	Inventory model	1
12	Examples of queuing models	1
13	Examples of inventory models	1
Module – III		10 Hours
14	Variance reduction technique, Use of antithetic variables	1
15	Use of control variates	1
16	Variance reduction by conditioning, stratified sampling, importance sampling	1
17	Statistical validation technique, goodness of fit test	1
18	Chi-square goodness of fit test for discrete data	2
19	Kolmogorov-Smirnov test for continuous data	1
20	Goodness of fit test when some parameters are unspecified	1

21	Two sample problem	1
22	Discussion	1
Module – I		12 Hours
23	Markov chain, stochastic processes, Markov chains	2
24	Chapman-Kolmogorov equations	2
25	States of a Markov chain, Properties of Markov chains	1
26	Continuous time Markov chains	1
27	Markov Decision Process: Model for Markov decision Process	1
28	Linear programming and optimal policies	2
39	Policy improvement algorithm	1
30	Discounted cost criterion	2
Total Session		36 Hours

Text Books

1. Frederick S. **Hiller**, Gerald J. **Lieberman**, "Introduction to Operations Research", McGraw Hill Education India Pvt. Ltd, Eighth edition, 2008, New Delhi.
2. Sheldon M. **Ross**, "Simulation", Academic Press(an imprint of Elsevier), Fourth edition

Reference Books:

1. Hamdy A.Taha,"Operations research", Pearson Education India, New Delhi
2. Jerry **Banks**, John S. **Carson II**, Barry L. **Nelson**, David M. **Nicol**, "Discrete Event System Simulation", 5th Edition, 2010, Pearson education Inc. New Delhi.
3. Andrew **Seila**, Vlatko **Ceric**, Pandu **Tadikamalla**, "Applied Simulation Modeling", 1st Edition, 2009, Cengage Learning pvt. Ltd. New Delhi.
4. Manuel D. **Rossetti**, "Simulation, Modeling and Arena", First Edition, 2009, Wiley India Pvt. Ltd. New Delhi.
5. Bernard P. **Zeigler**, Herbert **Praehofer**, Tag Gon **Kim**, "Theory of Modeling and Simulation", 2nd Edition, 2000, Academic Press/ Elsevier India Pvt. Ltd, New Delhi.


Signature of the Faculty.


Signature of the
Academic Coordinator, MCA


Signature of
The Principal