

- |  |           |
|--|-----------|
| <b>1. Introduction</b>   | <b>3</b>  |
| Systems – modeling – general – systems theory – Concept of simulation –Simulation as a decision making tool types of simulation.   |           |
| <b>2. Random Numbers</b>   | <b>5</b>  |
| Pseudo random numbers – methods of generating random variables – discrete and continuous distributions – testing of random numbers.  |           |
| <b>3. Design Of Simulation Experiments</b>   | <b>8</b>  |
| Problem formulation – data collection and reduction– time flow mechanism – key variables – logic flow chart –starting condition–run size, experimental design consideration – output analysis and interpretation validation. |           |
| <b>4. Simulation Languages</b>   | <b>14</b> |
| Comparison and selection of simulation languages – study of anyone simulation language.  |           |
| <b>5. Case study</b>   | <b>15</b> |
| Development of simulation models using simulation language studied for systems like queuing systems – Production systems – Inventory systems– maintenance and replacement systems and Investment analysis.                   |           |

**TOTAL = 45**

**References**

1. Jerry Banks and John S.Carson, Barry L. Nelson, David M.Nicol, “Discrete “Event System Simulation”, 3<sup>rd</sup> Edition, Prentice Hall,India, 2002.
2. Geoffrey Gordon, “System Simulation”, second Edition, Prentice Hall, India, 2002.
3. Narsingh Deo, “System Simulation with Digital Computer, “Prentice Hall, India, 2001.
4. Shannon, R.E. Systems simulation, The art and science, Prentice Hall, 1975.
5. Thomas J. Schriber, Simulation using GPSS, John Wiley, 1991.