# Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous Institute Affiliated to University of Mumbai)

| Course Code | Course Name | Teaching Scheme (Hrs/week) | | | Credits Assigned | | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | L | T | P | Total |
| ITL803 | Computer Simulation and Modeling Lab | -- | -- | 2 | -- | -- | 1 | 1 |
| | | Examination Scheme | | | | | | |
| | | ISE | | | ESE | | | Total |
| | | | | | Practical | | Oral | |
| | | 40 | | | 20 | | -- | 60 |

| Pre-requisite Course Codes | | ITC803 ( Computer Simulation and Modeling) |
|---|---|---|
| After successful completion of the course, student will be able to: | | |
| Course Outcomes | CO1 | Explain system elements, data collection, model done from research paper |
| | CO2 | Solve a queuing problem using Excel sheet, GPSS, Extend Sim |
| | CO3 | Solve a inventory problem using Excel sheet, GPSS, Extend Sim |
| | CO4 | Demonstrate the use of simulation on real world system as group project |

| Exp. No. | Experiment Details | Ref. | Marks |
|---|---|---|---|
| 1 | Identify from simulation research paper the following- Input, Decision parameter, output performance measures. Reference: paper published in wintersim.org | 1 | 5 |
| 2 | Bring out the statistics by solving a Single-server queue problem using Excel sheet | 1 | 5 |
| 3 | Bring out the statistics by solving a multi-server queue problem using Excel sheet | 1 | 5 |
| 4 | Solve to find the optimum inventory to order newspapers using Excel sheet | 1 | 5 |
| 5 | Bring out the statistics by solving a Single-server queue problem using GPSS | 2 | 5 |
| 6 | Bring out the statistics by solving an inventory problem using GPSS | 2 | 5 |
| 7 | Solve SSQ problem using ExtendSim | 3 | 5 |
| 8 | Solve Newspaper problem using Extend Sim | 3 | 5 |
| | | Total Marks | 40 |

**References:**


1. Jerry Banks, "*Discrete Event system Simulation*",3rd edition, PHI.
2. GPSS – World manual, Minuteman Software
3. https://www.extendsim.com/downloads/papers/WSC1997.PDF. manual and video are available in the ExtendSim software package installed in the laboratory.