



STANLEY
COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Approved by AICTE , New Delhi | Affiliated to Osmania University ,Hyderabad)
Address : Chapel Road, Abids ,Hyderabad

SE-519

PERFORMANCE EVALUATION OF COMPUTER SYSTEMS

UNIT-I

Fundamentals: Need for performance evaluation - Role of performance evaluation - Performance evaluation methods - Performance metrics and Evaluation criteria - CPU and I/O architectures - Distributed and Network architectures - Secondary storage - Topologies - Computer architecture – Fundamental concepts and performance measures.

UNIT-II

Probability and Stochastic Processes: Scheduling algorithms -Workloads - Random variables – Probability distributions - Densities -Expectation - Stochastic processes - Poisson process - Birth death process - Markov process. Discrete TimeMarkov chains (DTMC) - Bayes theorem - Conditional probability - Total probability - Discrete and Continuous random variables - Common distributions - Probability generating functions(PGF) and Laplace Transforms (LST) numerous examples from computer networking.

UNIT-III

Queuing Theory: Queuing systems - Networks of queues - Estimating parameters and Distributions - Computational methods - Simulation process - Time control - Systems and Modeling.

UNIT-IV

Petrinets and System Performance: Petri nets - Classical petri nets - Timed petri nets - Priority-based petri nets - Colored petri nets - Generalized petri nets - Tool selection - Validation of results - Performance metrics - Evaluation - Multiple server computer system analysis.

UNIT-V

Analysis: OS components- System architecture - Workloads - Design - Simulation - Analysis - Database system performance - Computer networks components - Simulation modeling of LAN.

Suggested Reading:

1. Paul J. Fortier. Howard E. Michael, "Computer Systems Performance Evaluation and Prediction". Elsevier Science, 2003.
2. Thomas G. Robertazzi, "Computer Networks and Systems Queuingtheory and Performance Evaluation", 3rd edition, Springer, 2000.
3. Domenico Ferrari. Giuseppe Serazzi and Alexandra Zeijher, "Measurement & Tuning of Computer Systems ", Prentice Hallinc, 1983.
4. Michael F. Mories and Paul F. Roth, "Tools and techniques Computer Performance Evaluation", Van Nostrand. 1982.
5. K.Kant and M.M.Srinivasan. "Introduction to computer system performance Evaluation", McGraw Hill, 1992.
6. Herbert Hellerman and Thomas F.Conroy, "Computer system performance", McGraw -Hill, 1992.