

**King Fahd University of Petroleum & Minerals**  
**College of Computer Sciences and Engineering**  
**Department of Computer Engineering**  
**COE 587: Performance Evaluation and Analysis**  
**(cross listed with CSE 642 Computer Systems Performance)**  
**Spring 2015 (142)**

**Catalog Description:**

Simulation of the functions of a computer system, Analytical and stochastic methods of performance, Graph models for multiprocessors and parallel processing. Performance measures. Performance evaluation techniques. Application areas. The modeling cycle. Flow analysis. Bottleneck analysis. Hierarchical modeling. Case studies.

**Prerequisite:** STAT 319 or equivalent.

**Main reference:** The Art of Computer Systems Performance Analysis by Raj Jain, John Wiley, 1991. (<http://www.cse.wustl.edu/~jain/books/perfbook.htm>)

**References:**

- Probability and Random Processes for Electrical Engineers, Addison Wesley, by Alberto Leon Garcia.
- Discrete-Event System Simulation, Fourth Edition, Prentice-Hall, by J. Banks, J.S. Carson, B. Nelson, D. Nicol, 2004.
- Simulation Modeling and Analysis, Third Edition, McGrawHill, by A. Law and W.D. Kelton, 2000.
- Measuring Computer Performance: A Practitioner's Guide" by David J. Lilja, Cambridge University Press, 2000.
- Jeremiah F. Hays, and Thimma V. J. Ganesh Babu, Modeling and Analysis of Telecommunications Networks, John Wiley, 2004

**Instructor:** Dr. Ashraf S. Hasan Mahmoud, Office: 22/420, Tel: 1724, email: ashraf AT kfupm.edu.sa

**Class Time/Place:** MW: 17:00-18:15 pm – Rm 24-149

**Office Hours:** MW 11:00-13:00, or by appointment.

**Grading:**

Homework/Quizzes/Participation	25%
Major Exam	20%
Project	25%
Final Exam	30%

## **Material Breakdown:**

### **Tentative Course Material (subject to change – based on textbook)**

- 1 Overview of Performance Evaluation (mainly as a reading assignment)
- 2 Measurement Techniques and Tools
- 3 Probability Theory and Statistics
- 4 Experimental Design And Analysis
- 5 Simulation (with emphasis on discrete-time event driven simulations)
- 6 Queueing Models