

**University of Jordan**  
**Computer Engineering Department**  
**Course Outline**  
**Computer Performance Evaluation (0907702)**

**I. Course Description**

Issues in Performance Evaluation and Benchmarking. Measurement Tools and techniques, Trace Driven and Execution Driven Simulation. Choice of metrics. Benchmarks. Statistical techniques for Performance Evaluation. Trace Generation and Validation, Synthetic Traces, Verification of Simulators. Design of Experiments. Analytical Modeling of Processors, Statistical modeling, Hybrid Techniques. Application of queuing theory, Markov models and probabilistic models for computer system evaluation. Workload Characterization.

**II. Textbooks and References**

1. Raj Jain, The Art of Computer Systems Performance Analysis, Wiley, 1991.
2. Hennessy and Patterson. Computer Architecture: A Quantitative Approach, 5th ed., Morgan Kaufmann, 2011.
3. A. Law, Simulation Modeling & Analysis, 4<sup>th</sup> ed., McGraw Hill, 2007.

**III. Student Materials**

Textbook, References, Class Handouts, Web Homepages, PC, and the Internet.

**IV. College Facilities**

A classroom with whiteboard and projection facilities, library, and computer laboratory.

**V. Instructional Methods**

1. Lectures
2. Office discussions
3. Projects and presentations by the students
4. Course homepage at [http://www.abandah.com/gheith/?page\\_id=1031](http://www.abandah.com/gheith/?page_id=1031)
5. Facebook group posts and discussions on <https://www.facebook.com/groups/326276797534035/>

**VI. Evaluation of Outcomes**

1. Mid-Term Exam — 30%
2. Simulation Project's Report and Presentation — 30%
3. Final Exam — 40%

**VII. Class Policies**

- Attendance is required
- All submitted work must be yours
- Cheating will not be tolerated
- Open-book exams
- Join the facebook group
- Check program announcements at: <http://www.facebook.com/pages/Master-in-Computer-Engineering-and-Networks-in-the-University-of-Jordan/257067841079897>

### VIII. Course Outline

The following table contains the list of topics to be covered in the course.

<b>Topic</b>	<b>Textbook Chapters</b>
Overview of Performance Evaluation	1-3
Measurement Techniques and Tools	4-7, 9-11
Simulation	24-28
<i>Midterm Exam</i>	
Probability Theory and Statistics	12, 14, 15
Experimental Design and Analysis	16-19

### IX. Schedule

The following table contains the important dates of this course.

<b>Date</b>	<b>Event</b>
Mon 15 Sep 2014	Classes Begin
Mon 10 Nov 2014	Midterm Exam
Mon 17 Nov 2014	Simulation project proposal is due and start of proposals presentations
Mon 15 Dec 2014	Simulation project report is due and start of simulation project presentations and demonstrations
Wed 24 Dec 2014	Last Lecture
Wed 31 Dec 2014	Final Exam (tentative)

### X. Sections and Instructors

<b>Sec</b>	<b>Meeting Time</b>	<b>Room</b>	<b>Instructor</b>	<b>Office Hours</b>	<b>e-mail, Homepage</b>
1	Mon, Wed 5:00-6:30	CPE 001	Dr. Gheith Abandah	Sun - Wed 11-12	<a href="mailto:abandah@ju.edu.jo">abandah@ju.edu.jo</a> , <a href="http://www.abandah.com/gheith">http://www.abandah.com/gheith</a>