# University of Jordan
# Computer Engineering Department
# Course Outline
# Performance Evaluation and Modeling (0907433)

## I. Course Description

Introduction to floating-point arithmetic and error analysis. Fundamentals of computer design. Technology trends. Performance metrics. Performance evaluation. Measurement techniques and tools. Workload characterization. Data presentation. Statistical methods for analyzing measured data. The quantitative approach: experimental design and analysis. Model types. Hardware Description Languages. Event-driven simulation. Introduction to queuing theory and modeling. Modeling and simulation packages and tools. Term project in simulation.

## 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, 4th ed., McGraw Hill, 2007.

## III. Student Materials

Textbook, Class Handouts, Web Page, 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. Facebook page posts and discussions on https://www.facebook.com/Cpe433PerformanceEvaluationAndModeling

## VI. Evaluation of Outcomes

1. Mid-Term Exam — 30%
2. Simulation Project's Report and Presentation — 20%
3. Final Exam —50%

## VII. Class Policies

- Attendance is required
- All submitted work must be yours
- Cheating will not be tolerated
- Open-book exams
- Follow the facebook page (Like it)
- Check department announcements at: http://www.facebook.com/pages/Computer-Engineering-Department/369639656466107

## VIII. Course Outline

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

| Topic | Textbook Chapters |
|---|---|
| Overview of Performance Evaluation | 1-3 |
| Measurement Techniques and Tools | 4-7, 9-11 |
| Simulation | 24-28 |
| *Midterm Exam* | |
| 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.

| Date | Event |
|---|---|
| Sun 3 Feb 2013 | Classes Begin |
| Mar 17 – Apr 4, 2013 | Midterm Exam Period |
| Sun 31 Mar 2013 | Simulation project proposal is due |
| Sun 5 May 2013 | Simulation project report is due and start of simulation project demonstrations |
| Sun 12 May 2013 | Last Lecture |
| May 18 – May 26, 2013 | Final Exam Period |

## X. Sections and Instructors

| Sec | Meeting Time | Room | Instructor | Office Hours | e-mail, Homepage |
|---|---|---|---|---|---|
| 1 | Sun, Tue, Thu 8:00-9:00 | CPE 001 | Dr. Gheith Abandah | Sun 12-1<br>Mon 11-12<br>Thu 9-10 | abandah@ju.edu.jo,<br>http://www.abandah.com/gheith |