

1438-1439 First Semester

CSC 523: Distributed Systems, 3 credit hours

Time: Section 1 (Male regular program) 04:00 P.M. – 07:00 P.M., Sunday
Section 2 (Female regular program) 01:00 P.M. – 04:00 P.M., Monday

Date : 26-12-1438– 10-04-1439 H.

Location: Room

Instructor: Dr. Iehab AL-Rassan, office phone: 4676585, email: irassan@yahoo.com

Text book: George Coulouris, Jean Dooimore, Tim Kindberg, Distributed Systems:

Concepts and Design (Fifth edition), Addison-Wesley publishers Limited, 2012

Office Hours: Monday 11 A.M –1 P.M, (*This might change – always check my home page first*)

Course website :

Section2 : (Female regular) <http://groups.yahoo.com/group/KSUcsc523-1-39>

Course Objectives:

This course has as a first objective to introduce the basic concepts upon which distributed systems at large and distributed operating systems in particular rely. The overall architecture of distributed systems along with their different components are then studied in depth, with a focus on design issues, design problems, solutions and performance issues. A term paper and project will help cement the acquired theoretical concepts.

Suggested text books and reference material:

1. G. Coulouris, J. Dollimore, T. Kindberg Distributed Systems: Concepts and Design, Addison Wesley.
2. A.S. Tannenbaum , Modern Operating Systems, Prentice Hall
3. C, Brown, UNIX Distributed Programming, Prentice Hall.
4. Selected papers

Prerequisite: CSC 502

You are strongly expected to have basic knowledge of the subjects of *Computer Operating Systems*, *Object Oriented Programming* , *Computer Networks* and *Computer Architecture*.

Syllabus

Characterization of Distributed Systems

System models

Networking and Internetworking

Interprocess Communication

Distributed Objects and Remote Invocation

Operating System Support

Security

Distributed File System

Name Service

Peer-To-Peer Systems

Time and Global States

Coordination and Agreement

Transactions and Concurrency Control

Distributed Transactions

Replication

Mobile and Ubiquitous Computing

Distributed Multimedia Systems

Distributed Shared Memory

Web Services

1. Assignments

- You have to post one question and its answer on the course website after every lecture. Also, you are required to evaluate someone else's posted question and its answer from the previous lecture, giving score out of 5.
- Some exercises from the text book.

2. Term Paper

One page proposal of the term paper is due on the third week.

A term paper in the area of mobile operating systems (Android OS, iPhone IOS, Symbian OS, Blackberry, or Windows phone OS) will be due on the week after the midterm.

3. Term Project

One page proposal of the term project is due on the second week after the midterm.

A term project will be required in one of the distributed systems concepts using mobile computing.

Grading Policy

10% Assignments

20% Term Paper

20% Term project

25% Midterm Exam

25% Final Exam

Lecture Schedule

Class Date	Topics
27-12-1438	Introduction, Characterization of Distributed Systems

05-01-1439	System Models
12-01-1439	Networking and Internetworking, <i>Term paper proposal is due</i>
19-01-1439	Interprocess Communication
26-01-1439	Distributed Objects and Remote Invocation
03-02-1439	Operating System Support
10-02-1439	Security
17-02-1439	<i>Midterm Exam</i>
24-02-1439	Distributed File System, <i>Term paper is due</i>
02-03-1439	<i>Presentation of term paper</i>
09-03-1439	Naming Service, <i>Term project proposal is due</i>
16-03-1439	Time and Global states
02-03-1439	Mobile and Ubiquitous Computing
23-03-1439	Web Services
30-03-1439	<i>Presentation of term project</i>
07-04-1439	Final exam