

Advanced Operating Systems

This course is designed to revisit basic concepts and introduce advance concepts related to operating systems such as process management, storage management, distributed systems and security. The concepts will be reinforced with focus on their implementation.

Synopsis:

Operating System concepts are basics for any Computing Science major. It is very important to know how the computer system works. Besides being a core course for Computing Science major, this course will reinforce basic concepts related to Computing Science and brush up object oriented programming skills, which will be helpful during thesis.

In this course, we will learn concepts, which will help us understand the working of basic operating system and distributed operating system. Also, we will learn how these concepts are implemented and translated into working systems. After learning and clearing each concept, we will implement it to cement its clarity. We will be using Microsoft Visual C# for implementation of the concepts.

Instructor

Dr. Syed Muhammad Khaliq-ur-RahmanRaazi is an Assistant Professor in Karachi Institute of Economics and Technology since April 2011. He received his PhD in Wireless Sensor Networks from Kyung Hee University, South Korea in 2010. Before that, he did his MS in Computer Science from LUMS and BE in Computer Software from NUST. In addition to that, he has industry experience of a couple of years. His research interests include Ad Hoc Networks, Wireless Body Area Networks, Content-Based Communication and Ubiquitous Computing.

Course Outline

- OS Services, System calls and programs
- Processes and Threads
- CPU Scheduling
- Process Synchronization
- Deadlocks
- Memory Management
- File Access & Directory Structure
- Distributed Systems & Coordination
- Protection
- Security



Books

We will be following the following book in this course: -

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, "Operating System Concepts", Sixth Edition