Course Information

Course Code

5710334

Course Section

1

Course Title

INTRODUCTION TO OPERATING SYSTEMS

Course Credit

3

Course ECTS

5.5

Course Catalog Description

Introduction to Operating Systems. Memory Management. Process Management. Concurrent Processes. Deadlocks. Processor Management. I/O and Device Management. File Management and File Systems. Introduction to Distributed Operating Systems. Synchronization in Distributed Systems. Distributed File Systems. Overview of contemporary OS technology.

Prerequisites

Students must complete one of the following sets to take this course.

Set	Prerequisites
2	5710331

Schedule

Tuesday , 10:40 - 11:30, BMB3
Thursday , 16:40 - 17:30, BMB3
Tuesday , 16:40 - 17:30, BMB2

Instructor Information

Name/Title

Assoc.Prof.Dr. YUSUF SAHİLLİOĞLU

Office Address

B107

Email

ysahilli@metu.edu.tr

Personal Website

http://www.ceng.metu.edu.tr/~ys

Office Phone

Office Hours

Any time

Course Assistants

Name/Title	Araş.Gör. MEHMET ÇELİK
Office Address	
Email	
Office Hours	

Name/Title	Araş.Gör. ÇAĞRI UTKU AKPAK
Office Address	
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Office Hours	

Name/Title	Araş.Gör. OZAN YILDIZ
Office Address	

Email

Office Hours

Course Objectives

By the end of the course students will learn fundemantal concepts, organization, components, and basic algorithms of operating systems.

Course Learning Outcomes

- **Understand** design and implementation of operating systems.
- **Understand** data structures and memory organization mechanisms of a complex software systems.
- **Understand** resource sharing mechanisms of a complex software system.
- **Understand** concurrent data exchange mechanisms of a complex software system.
- **Verify** data integrity in concurrent systems.
- **Design** and **implement** algorithms for problems requiring concurrency and synchronization.
- **Understand** authentication and security requirements of an operating system.
- **Understand** contemporary system infrastructures used in computation.

Instructional Methods

Lectures, progrmming assignments.

Tentative Weekly Outline

Week	Topic	Relevant Reading	Assignments
1	Introduction and OS Overview		
2	OS Overview and Processes		
3	Threads		Prog. Assignment 1, IPC
4	Synchronization		
5	Synchronization: Semaphores		
6	Synchronization: Monitors and Condition Variables, Deadlocks		Prog. Assignment 2, concurrency and synchronization
7	Scheduling		Midterm I
8	Scheduling		
9	Memory Management and Virtual Memory		
10	Memory Management and Virtual Memory		
11	Disks and Filesystems		

Week	Topic	Relevant Reading	Assignments
12	Filesystems Interface, I/O systems		Midterm II
13	Multi-processor systems, virtualization		Prog. Assignment 3, Filesystems
14	OS Security		

Course Textbook(s)

- Operating System Concepts, by Silberschatz, Galvin and Gagne Wiley.

- Modern Operating Systems, 3rd Edition, by Tanenbaum, Prentice Hall.

Course Material(s) and Reading(s)

Material(s)

Sample programs

Algorithm animations

Reading(s)

Supplementary Readings / Resources / E-Resources

Readings

Assessment of Student Learning

Assessment	Dates or deadlines
-	

Course Grading

Deliverable	Grade Points
Midterm I	23
Midterm II	23
Final	24
Programming Assignments	30
Total	100

Course Policies

Late Submission of Assignments

Late submission allowed up to 5 days. Late submission penalty is 2*days*days.

Other

All sections will be held in parallel including all exams and assignments. You do not need to change sections in case of schedule conflicts. You can attend any section if you have an excuse.

Information for Students with Disabilities

To obtain disability related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the ODTÜ Disability Support Office as soon as possible. If you need any accommodation for this course because of your disabling condition, please contact me. For detailed information, please visit the website of Disability Support Office: http://engelsiz.metu.edu.tr/

Academic Honesty

The METU Honour Code is as follows: *"Every member of METU community adopts the following honour code as one of the core principles of academic life and strives to develop an academic environment where continuous adherence to this code is promoted. The members of the METU community are reliable, responsible and honourable people who embrace only the success and recognition they deserve, and act with integrity in their use, evaluation and presentation of facts, data and documents."*