

# Operating Systems

MET CS 575

Hanscom AFB, Thursdays 6PM-9PM

Spring 2015

Mehrdad (Mike) Nourai

Email: [mnourai@bu.edu](mailto:mnourai@bu.edu)

Office hours: by appointment

## Course Description

Overview of operating system characteristics, design objectives, and structures. Topics include concurrent processes, coordination of asynchronous events, file systems, resource sharing, memory management, security, scheduling, and deadlock problems. 4 credits.

## Prerequisites:

MET CS 472 and MET CS 231 or MET CS 232 or instructor's consent.

## Text Book

Operating System Concepts 9<sup>th</sup> Edition, Silberschatz, Galvin and Gagne - Wiley

## Courseware

[MET BU's Blackboard Site](#)

## Class Policies

- 1) **Attendance & Absences** – Attendance is expected at all class meetings, it is your participation grade. You are responsible for all materials discussed in class. In general, no makeup quizzes and exams will be given unless an extremely good, *verifiable* reason is given in advance.
- 2) **Classroom Expectations:**
  - a. Please respect your classmates by silencing your cell phones and other electronic devices before class begins, and don't use them during lecture unless you are instructed to do so.
  - b. Please be on time, lateness always disrupts learning.
  - c. Please participate, ask questions, and interact with your classmates and your professor.
- 3) **Assignment Completion & Late Work** – All assignments are collected either in-class, email or on BB. Late assignments will have incremental 10% reduction each week that's late.
- 4) **Academic Conduct Code** – Please use the following wording, or an equivalent, in your syllabus: "Cheating and plagiarism will not be tolerated in any Metropolitan College course. They will result in no credit for the assignment or examination and may lead to disciplinary actions. Please take the time to review the Student Academic Conduct Code:

[http://www.bu.edu/met/metropolitan\\_college\\_people/student/resources/conduct/code.html](http://www.bu.edu/met/metropolitan_college_people/student/resources/conduct/code.html). This should not be understood as a discouragement for discussing the material or your particular approach to a problem with other students in the class. On the contrary – you should share your thoughts, questions and solutions. Naturally, if you choose to work in a group, you will be expected to come up with more than one and highly original solutions rather than the same mistakes.”

## Objectives

By the end of the course, the students are expected to:

- Understand the fundamental concepts of operating systems, including OS structures, processes/threads management, synchronization, deadlocks, memory management, file systems, security, distributed operating systems;
- Develop hands-on experience on basic UNIX/LINUX-programming.

Besides the book chapters, additional reading materials may be assigned for each topic. Students are responsible for ALL the materials covered including any topics not in the textbooks. Reading before and after class is required and essential to succeed in this course.

## Grading Criteria

The grade that a student receives in this class will be based on class participation, assignments, project, quizzes and final exam. The grade is breakdown as shown below. All percentages are approximate and the instructor reserves the right to make necessary changes.

- 10% on class participation
- 20% on assignments
- 30% on semester-long project (3 deliverables)
  - Topic
  - Annotated Bibliography
  - Final Paper
- 20% on Quizzes
- 20% on Final Exam

## Letter grade/numerical grade conversion is shown below:

A (95-100) A- (90-94)

B+ (85-89) B (80-84) B- (79-77)

C+ (74-76) C (70-73) C- (65-70)

D (60-65)

F (0 – 59)

**Class Meetings, Lectures & Assignments:**

*Note: This is a tentative schedule and a live document.*

*Lectures, Readings, and Assignments subject to change, and will be announced in class as applicable within a reasonable time frame.*

<b>Date</b>	<b>Topic</b>	<b>Readings Due</b>	<b>Assignments Due</b>
January 22	Introduction to the Syllabi Introduction to the Project Introduction to OS	Chapter 1	
January 29	Operating-System Structures	Chapter 2	Homework 1 Assigned
February 5	Processes	Chapter 3	
February 12	Threads	Chapter 4	Homework 1 Due Homework 2 Assigned
February 19	CPU Scheduling	Chapter 6	<b>Survey paper topic Due (Deliverable 1)</b>
February 26	Process Synchronization	Chapter 5	Homework 2 Due <b>Quiz 1 (Chapters 1, 2, 3, 4, 6)</b>
March 5	Deadlocks	Chapter 7	Homework 3 Assigned
March 12	<b>Spring Recess</b>		
March 19	Main Memory	Chapter 8	<b>Annotated Bibliography Due (Deliverable 2)</b>
March 26	Virtual Memory	Chapter 9	Homework 3 Due
April 2	Mass-Storage Structure	Chapter 10	Homework 4 Assigned
April 9	I/O Systems	Chapter 13	<b>Quiz 2 (Chapters 5, 7, 8, 9, 10)</b>
April 16	Protection	Chapter 14	Homework 4 Due Homework 5 Assigned
April 23	Security	Chapter 15	
April 30	Final Project Presentations		Homework 5 Due <b>Final Paper Due (Deliverable 3)</b>
May 7	Final Exam		<b>All Covered Material</b>