Boston University Metropolitan College

Operating Systems

MET CS 575
Course Format – On Campus
Thursdays 6:00 PM – 8:45 PM
Fall 2017

Instructor: Mehrdad (Mike) Nourai
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Office hours: after class

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 9th Edition, Silberschatz, Galvin and Gagne - Wiley

Courseware
Blackboard website: https://learn.bu.edu/

Class Policies

1) **Attendance & Absences** – Attendance is expected at all class meetings and is part of your class participation grade. You are responsible for ALL the materials covered and discussed in class. Coming to class late, leaving early, or being absent would result in missing important topics that were covered and discussed in class which negatively affects your final grade.
2) **Assignment Completion & Late Work** – No late coursework would be accepted. Any late or missed assignments would be recorded as zero. Exceptions may be made in the case of an illness or an emergency condition but only when a verifiable documentation is submitted within a reasonable timeframe. All assignments must be submitted electronically via the class Blackboard website on or before the published due date. No paper, e-mail, or any other submission types would be accepted. It is students' responsibility to make sure all assignments submissions are successful and make backups of work submitted.
3) **Quizzes and Exams** – No makeup quizzes or exams would be given. Any missed quizzes or exams would be recorded as zero. Exceptions may be made in the case of an illness or an emergency condition but only when a verifiable documentation is submitted within a reasonable timeframe. No electronic or computer devices such as smartwatch,

smartphone, tablet, laptop, or netbook (calculator is OK) can be used during quizzes and exams. Violations results in no credit for the exams, see Academic Conduct Code.

4) **Classroom Expectations** – Please do: respect your classmates by silencing your cell phone or other electronic devices before class begins, and don't use them during class; participate, ask questions, and interact with your professor.
5) **Academic Conduct Code** – An important message from the Dean's Office: "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. 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, disk and I/O, protection and security.
- Develop hands-on experience on UNIX/LINUX-programming.
- Be introduced to the Linux kernel source code and simple kernel-level programming.

Course Requirements

- Class participation
- Reading and studying
- Assignments (Homework and Project)
- Quizzes and Exam

Additional Course Policy

- Not all of the materials in each chapter will be covered during lecture/discussion, but all the materials listed in each chapter should be read.
- Additional reading materials may be assigned for each topic. Students are responsible for all the materials covered including any topics not in the textbooks.
- It is student's responsibility to participate in class, submit all the coursework successfully on the Blackboard by their due dates, and take quizzes and exams on their scheduled dates.
- Only ONE submission per assignment would be accepted.
- An incomplete grade is rarely given, and would only be considered if at least 85% of the course has been completed, AND compelling documented circumstances, AND request for an incomplete are submitted BEFORE the Final Exam.

Grading Criteria

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

- 5% on class participation
- 5% on homework
- 20% on projects
- 35% on Quizzes
- 35% on Final Exam

Letter grade/numerical grade conversion is shown below:

A (95-100)	A- (90-94)	
B+ (85-89)	B (80-84)	B- (75-79)
C+ (70-74)	C (65-69)	C- (60-64)
D (50-59)		
F (< 50)		

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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.

Date	Topic	Readings Due	Assignments Due
September 7	Introduction, Virtual Machines	Chapters 1, 16	
September 14	OS Structures	Chapter 2	
September 21	Processes	Chapter 3	
September 28	Threads	Chapter 4	
October 5	CPU Scheduling, Quiz 1	Chapter 6	**Quiz 1 (Chapters 1, 2, 3, 4)**
October 12	Process Synchronization	Chapter 5	
October 19	Deadlocks	Chapter 7	**Project 1 Due**
October 26	Main Memory	Chapter 8	
November 2	Virtual Memory	Chapter 9	
November 9	Mass-Storage Structure, Quiz 2	Chapter 10	**Quiz 2 (Chapters 5, 6, 7, 8, 9)**
November 16	I/O Systems, File-System	Chapters 11-13	
November 23	**Thanksgiving Recess**		
November 30	Protection & Security	Chapters 14, 15	
December 7	Projects Presentation		**Project 2 Due**
December 14	**Study Period – classes suspended**		
December 21 “Tentative”	Final Exam		**All Covered Material**