Boston University Metropolitan College

Operating Systems
MET CS 575
Course Format -> On Campus
Tuesdays 6:00 PM – 8:45 PM
Fall 2019

Instructor: Dr. Mehrdad Nourai
Email: mnourai@bu.edu
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 it is part of your class participation grade. Coming to class late and/or leaving early, can adversely effect your final grade. You are responsible for all materials discussed in class.
2) **Assignment Completion & Late Work** – It is expected of student to submit all coursework on or before published due dates. No late work or extensions will be scheduled except in emergency case.
3) **Quizzes and Exams** – No make-up quizzes or exams will be scheduled except in emergency case.
4) **Assessments and Grading** – Grades are earned for completing the required coursework, quizzes and exams per terms of the class policies. The instructor reserves all the rights for his assessments. No regrading will be scheduled except in case of error.
5) **Incomplete and withdrawal** – An incomplete grade is rarely given and the instructor reserves all the rights for its consideration. It is for a case that the student has actively participated in the course throughout the semester with good standing and completed majority of the coursework with good grades, but due to unforeseen circumstances has

missed minor coursework toward the end of the semester. For all other reasons, it is the student's responsibility to file an official withdrawal form with the registrar's office.

6) **Classroom Expectations** – Please respect your classmates by turning off your phone or other electronic devices before class begins, and do not use them during class. I encourage you to participate in class discussions and ask questions.

7) **Academic Conduct Code** – It is your responsibility to comply with the Academic Conduct Code policy. The following is an important message from the MET Dean: "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, students are expected to:
- Understand the fundamental concepts of operating systems, including OS structures, processes/threads management, synchronization, deadlocks, memory management, filesystems, disk, I/O, protection and security.
- Develop hands-on experience on Linux-programming.
- Be introduced to the Linux kernel source code and simple kernel-level programming.

Course Requirements
- Class discussions and participation
- Reading and studying
- Assignments
- Term-Project & Presentation
- Assessments
- Additional reading materials (if assigned)

Strategies for Learning
We will cover many materials that require critical thinking and practice to master. The following are strategies for in-depth learning of the materials:
- Attend class and take notes.
- Read the textbook and any additional materials covered in class.
- Explore online resources, e.g., articles, tutorials, source code, documentation, etc.
- Form a study group.

- Participate in class discussions.
- The more time and effort you expend, the more benefits you will receive.

Grade Calculation:
Grades will be weighed as follows.

Item	Percentage of Grade
Assignments & Class Participation	10
Term-Project & Presentation	15
Quiz 1	20
Quiz 2	20
Final Exam	35
Total	100

The number grade calculated will be converted to a letter grade using the following table.

Calculated Grade (G)	Letter Grade	Calculated Grade (G)	Letter Grade
$95 \leq G \leq 100$	A	$70 \leq G < 75$	C+
$90 \leq G < 95$	A-	$65 \leq G < 70$	C
$85 \leq G < 90$	B+	$60 \leq G < 65$	C-
$80 \leq G < 85$	B	$50 \leq G < 60$	D
$75 \leq G < 80$	B-	$0 \leq G < 50$	F

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Class Meetings, Lectures & Assignments:
This is a tentative schedule & a live document. The instructor reserves the rights to make changes.

Date	Topic	Readings Due	Assignments Due
September 3	OS Introduction, Virtual Machines	Chapters 1, 16	
September 10	OS Structures	Chapter 2	
September 17	Processes	Chapter 3	Assignment 1
September 24	Threads	Chapter 4	**Term-Project Deliverable 1**
October 1	Quiz 1		**Quiz 1 (Chapters 1, 2, 3, 4)**
October 8	CPU Scheduling	Chapter 6	Assignment 2
October 15	Substitute Monday schedule of classes		
October 22	Process Synchronization, Deadlocks	Chapters 5, 7	
October 29	Main Memory	Chapter 8	Assignment 3
November 5	Quiz 2		**Quiz 2 (Chapters 5, 6, 7, 8)**
November 12	Virtual Memory, Mass-Storage Structure	Chapters 9, 10	**Term-Project Deliverable 2**
November 19	Mass-Storage Structure, Filesystems, I/O Systems	Chapters 10-13	
November 26	Protection & Security	Chapters 14, 15	Assignment 4
December 3	Project Presentations		**Term-Project Deliverable 3**
December 10	Project Presentations		
December 17	Final Exam		**All covered materials**