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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  

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

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 will be due at the start of class on  
the due date. The late assignments will be penalized within a week with 5% of your grade  
each day. No assignments will be accepted one week after the deadline, or after solution  
has been posted. It is students' responsibility to keep secure backups of all assignments.
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, disk and I/O, protection and security.
- Develop hands-on experience on basic UNIX/LINUX-programming.
- Be introduced to the Linux kernel source code and simple kernel-level programming.
- Develop system thinking skills.

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.

**Course Requirements**

- Class participation
- Reading and study
- Assignments (homework & project)
- Quizzes and Exam

**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
- 10% on assignments
- 20% on semester-long project
- 30% on Quizzes
- 30% on Final Exam
Boston University Metropolitan College

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:
- The following schedule is tentative and may be changed according to the actual progress of the class.
- Lectures, Readings, and Assignments subject to change, and will be announced in class as applicable within a reasonable time frame.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings Due</th>
<th>Assignments Due</th>
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<tbody>
<tr>
<td>May 19</td>
<td>Introduction to the Syllabi Introduction</td>
<td>Chapter 1</td>
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<td>to the Project Introduction to OS</td>
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<td>May 26</td>
<td>Operating-System Structures, Processes</td>
<td>Chapters 2,3</td>
<td>Homework 1 Assigned</td>
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<td>June 2</td>
<td>Processes, Threads</td>
<td>Chapters 3,4</td>
<td>Homework 1 Due</td>
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<td>Homework 2 Assigned</td>
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<td>June 9</td>
<td>CPU Scheduling</td>
<td>Chapter 6</td>
<td>Survey paper topic Due</td>
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<td>Deliverable 1</td>
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<td>June 16</td>
<td>Process Synchronization</td>
<td>Chapter 5</td>
<td>Quiz 1 (Chapters 1, 2, 3, 4, 6)</td>
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<tr>
<td>June 23</td>
<td>Process Synchronization, Deadlocks</td>
<td>Chapters 5,7</td>
<td>Homework 2 Due</td>
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<td>Homework 3 Assigned</td>
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<td>June 30</td>
<td>Main Memory, Virtual Memory</td>
<td>Chapters 8,9</td>
<td>Annotated Bibliography Due (Deliverable 2)</td>
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<td>July 7</td>
<td>Virtual Memory, Mass-Storage Structure</td>
<td>Chapters 9,10</td>
<td>Homework 3 Due</td>
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<td>Homework 4 Assigned</td>
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<tr>
<td>July 14</td>
<td>I/O Systems</td>
<td>Chapter 13</td>
<td>Quiz 2 (Chapters 5, 7, 8, 9, 10)</td>
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<td>July 21</td>
<td>Protection &amp; Security</td>
<td>Chapters 14,15</td>
<td>Homework 4 Due</td>
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<td>Homework 5 Assigned</td>
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<td>July 28</td>
<td>Final Project Presentations</td>
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<td>Homework 5 Due</td>
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<td>Final Paper Due (Deliverable 3)</td>
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<td>August 4</td>
<td>Final Exam</td>
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<td>All Covered Material</td>
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