Boston University Metropolitan College

Advanced Programming Techniques

MET CS 622
Charles River Campus - Boston
Tuesdays 6:00 PM – 8:45 PM
Fall 2018

Instructor: Dr. Mehrdad (Mike) Nourai
Email: mnourai@bu.edu
Office hours: after class

Course Description
Comprehensive coverage of object-oriented programming with cooperating classes. Implementation of polymorphism with inheritance and interfaces and in Java library containers. Programming with exceptions, stream input/output and graphical AWT and Swing components. Threads, sockets, datagrams and database connectivity are also covered in this course. Laboratory course. 4 credits.

Prerequisites:
MET CS 342 or equivalent knowledge of Java. Or MET CS 521 and MET CS 526. Or instructor's consent.

Text Book
Java How to Program (11th Edition), by Deitel and Deitel, published by Pearson, 2018, ISBN-13: 9780134743356

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

Class Policies

1) **Attendance & Absences** – Class attendance for the entire class period is expected at all class meetings and it is part of your class participation grade. Lecture topics may include additional course materials that will be covered in class. In addition, most announcements will be made in class. You are responsible for ALL the materials covered and discussed in class, whether you are present or not. The likelihood of failing the course will subsequently increase by coming to class late, leaving early, or being absent.
2) **Assignment Completion & Late Work** – No late coursework would be accepted. Any late or missed assignments would be graded as zero. Exceptions may be made in case of an illness or an emergency condition 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, they are on time, and have backups of coursework submitted.

3) **Assessments** – No makeup exams would be given. Any missed exams would be graded as zero. Exceptions may be made in case of an illness or an emergency condition when a verifiable documentation is submitted within a reasonable timeframe. No electronic or computer devices such as smartphone, smartwatch, tablet, laptop, or netbook (calculator is OK) can be used during exams. Violations would result in academic conduct code consequences and grade of zero for the exam (see the Academic Conduct Code item 5).
4) **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, ask questions, and interact with your professor.
5) **Academic Conduct Code** – The following is 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 object-oriented programming.
- Develop hands-on experience on advanced programming techniques.
- Expand students' knowledge of modern Java programming language.
- Learn to use modern IDE to develop and debug code.

Course Requirements

- Class discussions and participation
- Reading and studying
- Assignments (Homework and Project)
- Assessments

Additional Course Policy

- If due to time constraint, we do not get to cover all the materials from each chapter during lecture, it is expected that students read the entire chapter.
- 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 exams on their scheduled dates.
- One submission per assignment would be accepted.

An incomplete grade is rarely given, and it is at the discretion of the faculty for approval. At least 80% or more of the coursework must be completed and request with compelling documentation must be submitted to the faculty two weeks before official end of the semester. Each incomplete coursework would earn 80% of the original points.

Grading Criteria

The grade that a student receives in this class will be based on components as shown below. All percentages are approximate and the instructor reserves the right to make changes.

Class Participation	10%
Homework and Labs	30%
Project and Presentation	30%
Assessments	30%

Programming evaluation Criteria

Programs will be graded based on components shown below. All percentages are approximate and the instructor reserves the right to make changes.

- 60% execution correctness (e.g. output is correct and is consistent with the guidelines)
- 10% structure (e.g., modularization, information hiding)
- 10% insightful programming (e.g., developing reusable class components)
- 10% readability (e.g., consistent style, capitalization, indenting, naming components)
- 10% documentation (e.g., appropriate commenting and style, file header information)

Programs submitted after the deadline would be graded as zero.

Letter grade

The following is the letter-grade numerical-grade conversion table. The table is approximate and the instructor reserves the right to make change.

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)		

Class Meetings, Lectures & Assignments:

Note: This is a tentative schedule and a live document. Instructor reserves the right to make changes to the Lectures, Readings, Assignments, and Assessments. Changes will be announced in class as applicable within a reasonable time frame.

Date	Topic	Readings Due	Assignments Due
September 4	Introduction	Chapters 1-7	
September 11	Classes, Methods, Objects	Chapter 8	Homework/Labs
September 18	Inheritance, Polymorphism, Exception Handling	Chapters 9, 10, 11	Homework/Labs
September 25	GUI, Graphics	Chapters 12, 13	Homework/Labs
October 2	Regular Expressions	Chapter 14	Homework/Labs
October 9	No class – Substitute Monday schedule of classes		
October 16	Files and Streams, Object Serialization	Chapter 15	Homework/Labs
October 23	Generic Collections	Chapter 16	Homework/Labs
October 30	Lambdas and Streams	Chapter 17	Homework/Labs
November 6	Generic Classes and Methods, JavaFX	Chapters 20, 22	Homework/Labs
November 13	Concurrency, Accessing Databases with JDBC	Chapters 23, 24	Homework/Labs
November 20	Project Presentations		
November 27	Project Presentations		Term-Project due
December 4	Quiz		
December 11	Networking	Chapter 28	