ISTANBUL MEDIPOL UNIVERSITY
SYLLABUS
IMU-COE 1213250 OBJECT ORIENTED PROGRAMMING
2019 Spring Semester

Course Code	Course Name		Course Type	Weekly T	A	L	Credits	ECTS	Weekly Class Schedule
COE1213250	Object Oriented Programming		Required	3	0	2	4	6	M : 9:00-12:00
Prerequisite			**Prerequisite to**						M: 13:30-1630 CZ12 CZ211 North Campus

Lecturer	Selim Akyokuş	**Office Hours Schedule**	Monday 16:30, Thursday 16:30
E-mail	sakyokus@medipol.edu.tr		
Phone	x 5350	**Office / Room No**	C - 320 - North Campus

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Course Objectives

This is a second course in programmming. In the first course, students learn the fundamental logic, concepts and techniques like data types, loops, methods, and arrays. The objective of this course is to teach oojEct oriented programming (OOP) in a problem-driven way that focuses on problem solving rather than syntax. Students learn object thinking and design, and improve thier algorithmic thinking skills. They learn how and when to apply OOP techniques to a given problem effectively. The course starts with a review of fundudamental techniques in Java, and then teaches objects and classes, object-oriented thinking, inheritance and polymorphism, exception handling and text I/O, abstract classes and interfaces, Java GUI basics, event-driven programming and animations, Java UI controls and multimedia, binary I/O, recursion, generics, lists, stacks, queues, and priority queues, sets and maps, implementing lists, stacks, queues, and priority queues.

Textbook

Required Textbooks:
 - Introduction to Java Programming and Data Structures, Comp. Version (11th Edition), Y. Daniel Liang, Peason, 2018.
 - Computer Science An Interdisciplinary Approach, Robert Sedgewick, Kevin Wayne, Peasoni 2018.
Additional Textbooks and References:
 - Java Software Solutions, Global Edition, 9/e, Lewis & Loftus, Pearson, 2019.
 - Java: An Introduction to Problem Solving and Programming, Global Edition, 8/e, Savitch, Pearson, 2019.
 - Core Java Volume I and II --Fundamentals, 11/e, Horstmann, Pearson, 2019.
 - Java How to Program, Early Objects, Global Edition, 11/e, Deitel & Deitel, Peason, 2018.
 - Introduction to Programming Using Java, Eighth Edition Version 8.0, 2018 David J. Eck.

Learning Outcomes

After successful completion of the course, the student will be able to:

1	1. He/she will be able to describe fundamentals of object-oriented programming.
2	1.1. He/she can discuss what object-oriented programming is.
3	1.2. He/she can compare object-oriented and procedural programming languages.
4	1.3. He/she can explain main components of object-oriented programming.
5	2. He/she will able to develop Java programs.
6	2.1. He/she can describe how a Java program runs.
7	2.2. He/she can use basic data types in Java.
8	2.3. He/she can use basic control structures in Java.
9	2.4. He/she can compare various loop types in Java.
10	2.5. He/she can use basic functions and libraries in Java.
11	2.6. He/she can describe the building blocks of a Java program.
12	2.7. He/she can use libraries and methods for GUI (graphical user interface) design.
13	2.8. He/she can discuss how to apply inheritance by object-oriented design.

Teaching Methods

Class discussions with examples. The notes and the presentations will be delivered during the lectures.

WEEK	TOPIC	REFERENCE
Week 1	Introduction to Computers, Programs, and Java	Chap. 1
Week 2	Elementary Programming Selections Mathematical Functions Characters, and Strings	Chap. 2, 3 & 4
Week 3	Loops Methods	Chap. 5 & 6
Week 4	Single-Dimensional Arrays Multidimensional Arrays	Chap. 7 & 8
Week 5	Objects and Classes Object-Oriented Thinking	Chap. 9 & 10
Week 6	Inheritance and Polymorphism Exception Handling and Text I/O	Chap. 11 & 12
Week 7	Abstract Classes and Interfaces JavaFX Basics	Chap. 13 & 14
Week 8	Event-Driven Programming and Animations Review	Chap. 15
Week 9	Exam Week	All slides and chapters till Week 9
Week 10	JavaFX UI Controls and Multimedia Binary I/O	Chap. 16 & 17
Week 11	Recursion Generics	Chap. 18 & 19
Week 12	Lists, Stacks, Queues, and Priority Queues Sets and Maps	Chap. 20 & 21
Week 13	Implementing Lists, Stacks, Queues, and Priority Queues	Chap. 24
Week 14	Review	Chap 16-24

Assessment Methods and Criteria

Evaluation Tool	Quantity	Weight
Final Exam	1	40%
Midterm	1	22%
Quizes	2	16%
Labs	1	10%
HW Assignments	6	12%

***   ECTS Credit Calculation   ***   Language of Instruction: English

Activity	Hours	Weeks	Student Workload Hours	Activity	Hours	Weeks	Student Workload Hours
Lecture hours	3	14	42,0	In-term exam study	16	3	48,0
Labs	2	10	20,0	Final exam study	24	1	24,0
HWs	3	6	18,0				0,0
						Total Workload Hours =	152,0
						Recommended ECTS Credit =	6