GAU, Faculty of Engineering

Course Unit Title	Java Programming
Course Unit Code	CEN477
Type of Course Unit	Technical Elective, Computer Engineering Students
Level of Course Unit	4th Year BSc
National Credits	3
Number of ECTS Credits Allocated	6 ECTS
Theoretical (hour/week)	3
Practice (hour/week)	-
Laboratory (hour/week)	-
Year of Study	4
Semester when the course unit is delivered	7/8
Course Coordinator	Assist. Prof. Dr. Tamer Tulgar
Name of Lecturer (s)	Assist. Prof. Dr. Tamer Tulgar
Name of Assistant (s)	-
Mode of Delivery	Face to Face
Language of Instruction	English
Prerequisities and co-requisities	CEN305 - Object Oriented Programming
Recommended Optional Programme Components	Basic Bacground on Object Oriented Programming and Data Structures

Objectives of the Course:

- To review the basic programming concepts in JAVA programming language.
- To give the students a solid foundation of Object Oriented Programming in JAVA language which include classes, constructors and overriding methods, overloading methods
- To teach inheritance and polymorphism in JAVA
- To teach abstract classes and interfaces in JAVA
- To provide the students the basics of JAVA language so that they can continue to develop their know-how and programming abilities in JAVA

Learning Outcomes

When this course has been completed the student should be able to		Assesment.
1	Distinguish Object Oriented programming from declarative and procedural ones	1
2	Understand the Java Virtual Machine architecture and behavior	1
3	Design and implement object oriented software solutions using the JAVA language	1
4	Use program flow control statements to develop Java software solutions	1
5	Use inheritance, polymorphism, Interfaces and Abstract classes where needed in real-life software projects	1,2
6	Learn how to use basic JAVA library and tools at a depth that is sufficient to solve real-world programming problems	1,2

Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work

Course's Contribution to Program

		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	4
2	Ability to design and conduct experiments as well as to analyze and interpret data	1
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	1
4	Ability to apply systems thinking in problem solving and system design	5
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	2
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	5
7	Ability to express their ideas and findings, in written and oral form	1
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	4
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	3
10	To apply fundamental concepts of software design, database design, data processing and artificial intelligence in the modeling, designing, implementing, testing and deploying software solutions.	5
11	Ability to analyse and design hardware systems by applying the principles of embedded systems, microprocessors, computer networks, distributed systems and data communication.	1

CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)

Course Contents

Week			Exams
1	Chapter 1	Introduction	
2	Chapter 2	Flow Control Statements	
3		Flow Control Statements	
4		Arrays, Strings, Class Lib. Usage	
5	Chapter 3	Classes and Objects	
6		Classes and Objects	
7			Midterm
8	Chapter 4	Inheritance	
9		Inheritance	
10		Compile time polymorphism	
11		Run time Polymorphism	
12		Inheritance and Polymorphism case study	Quiz
13	Chapter 5	Abstract Classes and methods	
14		Abstract Classes and methods	
15		Interfaces	Final

Recommended Sources

Textbook:

H. Shildt, "Java: A Begginner's Guide", McGraw-Hill Osborne Media, 4th Edition, 2006.

Supplementary Material (s):

B. Eckel, "Thinking in JAVA", Prentice Hall, 4th Edition, 2006

Assessment

Attendance	10%	Less than 25% class attendance results in NG grade.
Laboratory	-	
Midterm Exam	30%	Written Exam
Quiz	20%	Written Exam
Final Exam	40%	Written Exam
Total	100%	

ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	3	45
Labs and Tutorials	-	-	-
Assignments	-	-	-
Project/Presentation/Report Writing	4	5	20
E-learning Activities	-	-	-
Quizzes	1	15	15
Midterm Examination	1	15	15
Final Examination	1	15	15
Self Study	15	4	60
Total Workload			170
Total Workload/30 (h)			5.6
ECTS Credit of the Course			6