



**COURSE DESCRIPTIONS**

<b>Faculty</b>	Science and Information Technology				
<b>Department</b>	Computer Science			<b>NQF level</b>	6
<b>Course Title</b>	Visual Programming	<b>Code</b>	501317	<b>Prerequisite</b>	-----
<b>Credit Hours</b>	3	<b>Theory</b>	3	<b>Practical</b>	0
<b>Course Leader</b>	Dr Nisrean Thalji	<b>email</b>	<a href="mailto:n.thalji@jadara.edu.jo">n.thalji@jadara.edu.jo</a>		
<b>Lecturers</b>	Nada Aljarrah	<b>emails</b>	<a href="mailto:n.aljarrah@jadara.edu.jo">n.aljarrah@jadara.edu.jo</a>		
<b>Lecture time</b>	Sec3: 11:30- 1:00 PM Mon, Wed Sec2: 1:00- 2:30 PM Mon, Wed	<b>Classroom</b>	Sec3: C203 Sec2:C020		
<b>Semester</b>	Second	<b>Production</b>		<b>Updated</b>	2023
<b>Awards</b>	Bachelor Degree			<b>Attendance</b>	Fulltime

<b>Short Description</b>
<p>This course introduces students to the fundamentals of programming using the Java language. It covers key concepts such as variables, data types, control structures, methods, arrays, and object-oriented programming principles. Students will learn how to design and implement Java programs, gaining hands-on experience through coding exercises and projects. The course also covers topics like input/output operations, exception handling, and basic GUI development. By the end of the course, students will have a solid foundation in Java programming and the skills to develop functional applications using the Java language.</p>
<b>Course Objectives</b>
<p>By the end of the course, students should be able to:</p> <ul style="list-style-type: none"> <li>• Understand the fundamental concepts of Java programming, including variables, data types, control structures, loops, methods, and arrays.</li> <li>• Gain proficiency in using Java development tools and environments, including setting up and configuring a Java development environment.</li> <li>• Apply object-oriented programming principles, such as encapsulation, inheritance, and polymorphism, to design and implement Java programs.</li> <li>• Develop the ability to write well-structured and efficient Java code, following best practices and coding standards.</li> <li>• Familiarize themselves with key Java libraries and frameworks for tasks such as file handling, exception handling, and GUI development.</li> </ul>

## Learning Outcomes



<b>A. Knowledge - Theoretical Understanding</b>
<p>Upon completion of this course, students will be able to:</p> <p>a1. Demonstrate a solid understanding of the fundamental concepts of Java programming, including variables, data types, control structures, and object-oriented programming principles and apply object-oriented programming principles, such as encapsulation, inheritance, and polymorphism, to design and implement well-structured Java programs. (K1)</p>
<b>B. Knowledge - Practical Application</b>
<b>C. Skills - Generic Problem Solving and Analytical Skills</b>
<p>Upon completion of this course, students will be able to:</p> <p>b1. Demonstrate the ability to debug and troubleshoot Java programs, identifying and resolving errors and issues. (S1)</p> <p>b2. Utilize Java libraries and frameworks effectively to perform common programming tasks, such as file handling, exception handling, and basic GUI development. (S2)</p>
<b>D. Skills - Communication, ICT, and Numeracy</b>
<b>E. Competence: Autonomy, Responsibility, and Context</b>
<b>Teaching and Learning Methods</b>
<ul style="list-style-type: none"> <li>• Lectures and interactive discussions</li> <li>• Hands-on coding</li> <li>• Pair Programming</li> <li>• Online Resources and Tutorials:</li> <li>• Assessments and Examinations</li> <li>• Jadara E-Learning Platform</li> </ul>
<b>Assessment Methods</b>
<p>Midterm exam, Final exam, Coding Assignments.</p>

Course Contents					
Week	Hours	CLOs	Topics	Teaching & Learning Methods	Assessment Methods
1,2	6	a1	<ul style="list-style-type: none"> <li>Introduction to Java: Syntax, keywords, and basic program structure.</li> <li>Variables and Data Types: Declaration, assignment, and manipulation of variables, and understanding different data types in Java.</li> </ul>	Lecture, discussion	Assignment and labs,
3,4	6	a1	Control Structures: Conditional statements (if-else, switch) and loops (for, while, do-while) for flow control in programs.	Lecture, discussion	Assignment and labs,
5,6,7	9	a1, b1	<ul style="list-style-type: none"> <li>Arrays: Working with one-dimensional and multi-dimensional arrays to store and manipulate collections of data.</li> <li>Methods and Functions: Creating and using methods/functions for code organization, reusability, and modular programming.</li> </ul>	Lecture, discussion	Assignment and labs,
8,9	6	a1, b1,b2	Object-Oriented Programming (OOP) Concepts: Classes and objects,	Lecture, discussion	Midterm exam
10 ,11	6	a1, b1, b2	Object-Oriented Programming (OOP) Concepts: Inheritance, Polymorphism, and Encapsulation)	Lecture, discussion	Assignment and labs,
12, 13	6	a1, b1,b2	Exception Handling: Understanding and handling exceptions to manage errors and ensure program stability.	Lecture, discussion	Assignment and labs,
14	3	a1, b1,b2	Graphical User Interface (GUI) Development: Basic GUI design and event handling using Java's Swing or JavaFX libraries.	Lecture, discussion	Assignment and labs,
15	2	a1, b1,b2	End of Term Exam		Final exam



Infrastructure	
<b>Textbook</b>	Introduction to Java Programming, Daniel Liang, 9th Edition
<b>References</b>	ISBN 978-0133761313
<b>Required reading</b>	
<b>Electronic materials</b>	Available on <a href="http://elearning.jadara.edu.jo/CourseContent/index/17562/">http://elearning.jadara.edu.jo/CourseContent/index/17562/</a>
<b>Other</b>	Any other book related to Java Programming

Course Assessment Plan					
Assessment Method		Grade	CILOs		
			a1	b1	b2
First (Midterm)		30	14	6	10
Second (if applicable)					
Final Exam		50	30	10	10
Coursework					
Coursework assessment methods	Assignments	10		5	5
	Case study				
	Discussion and interaction	10	10		
	Group work activities				
	Lab tests and assignments				
	Presentations				
	Quizzes				
<b>Total</b>		<b>100</b>	54	21	25

Plagiarism
<p>Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code).</p> <p>Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.</p>