جامعة الزيتونة الأردنية

Al-Zaytoonah University of Jordan

Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: Visual Programming

Course Number: 0130232

General Course Information:

Course Title	Visual Programming
Course Number	0130232
Credit Hours	3
Education Type	Traditional Learning
Prerequisites/Co-requisites	Applied Programming (0130231)
Academic Program	Computer Science
Program Code	0130
Faculty	Faculty of Information Technology
Department	Computer Science
Level of Course	2
Academic Year /Semester	2024/2025 2nd Semester
Awarded Qualification	BS'c
Other Department(s) Involved in Teaching the Course	---
Language of Instruction	English
Date of Production/Revision	2025

Course Coordinator:

Coordinator's Name	Dr. Assal Ali Alqudah
Office No.	9231
Office Phone Extension Number	---
Office Hours	9:30-10:30 Sunday & Tuesday , 11:00-12:00 Monday & Wednesday
E-mail	a.alqudah@zuj.edu.jo

Other Instructors:

Instructor Name	
Office No.	
Office Phone Extension Number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	**This module focuses on the principles and techniques of visual programming, emphasizing graphical user interface (GUI) design and development. Students will learn to create interactive, user-friendly applications using visual programming environments and tools, such as Visual Studio or other drag-and-drop platforms. The course covers event-driven programming, GUI components, data binding, and application logic integration. By the end, students will develop visually appealing, functional applications tailored to user needs.**
Arabic	يركّز هذا المقرر على مبادئ وتقنيات البرمجة البصرية، مع التأكيد على تصميم وتطوير واجهات المستخدم الرسومية (GUI). سيتعلّم الطلاب كيفية إنشاء تطبيقات تفاعلية وسهلة الاستخدام باستخدام بيئات وأدوات

	البرمجة البصرية، مثل Visual Studio أو غيرها من المنصات المعتمدة على السحب والإفلات. يغطي المقرر البرمجة القائمة على الأحداث، ومكونات واجهة المستخدم الرسومية، وربط البيانات، وتكامل منطق التطبيق. وبنهاية المقرر، سيتمكن الطلاب من تطوير تطبيقات جذابة وظيفيًا ومصممة وفقًا لاحتياجات المستخدم.

Textbook: ***Author(s), Title, Publisher, Edition, Year, Book website.***

- Herbert Schildt**, Java: The Complete Reference**, 13th Edition, McGraw-Hill Education, 2023, https://www.mhprofessional.com/java-the-complete-reference-thirteenth-edition-9781260463415.

References: ***Author(s), Title, Publisher, Edition, Year, Book website.***

- Scott Brandt, Java From Zero: Learn Java Programming Fast for Beginners to Professionals: The Complete Guide With Code Examples and Exercises to Become a Professional, Lulu.com, 2023, ISBN-13: 978-1447794158.
- Herbert Schildt, *Java: A Beginner's Guide*, 8th Edition, McGraw-Hill Education, 2020, https://www.mhprofessional.com/java-a-beginners-guide-eighth-edition-9781260440218.
- Paul J. Deitel & Harvey M. Deitel, *Java How to Program, Early Objects*, 11th Edition, Pearson, 2017, https://www.oreilly.com/library/view/java-how-to/9780134751962/

Course Educational Objectives (CEOs):

1.	Develop a strong understanding of advanced object-oriented programming concepts within a graphical user interface (GUI) environment using Java.
2.	Acquire the skills to design and implement interactive GUI applications utilizing Java Swing components and event-driven programming techniques.
3.	Gain the ability to integrate graphics, animations, and multimedia elements into Java-based GUI applications for enhanced user experiences.
4.	Learn to manage file and database operations by creating, reading, updating, and manipulating data within Java applications.

Intended Learning Outcomes (ILO's):

Intended learning outcomes (ILOs)		Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	JNQF Descriptors**
	K- Knowledge and Understanding				
K1	Explain advanced object-oriented programming concepts using Java in a GUI environment.	CEO1	PLO1, PLO2	Understanding	K
K2	Apply Java Swing components to design and implement GUI forms and interactive elements.	CEO2	PLO2, PLO4	Applying	K
	S- Intellectual skills				
S1	Analyze problems and determine appropriate use of OOP structures and GUI controls to solve them.	CEO2	PLO3, PLO4	Analyzing	S
S2		CEO3	PLO2, PLO4	Applying	S

	Implement graphics and animations in Java GUI applications using appropriate libraries.				
S3	Perform file input/output and database operations including data manipulation and persistence.	CEO4	PLO2	Applying	S
	C- Competencies				
C1	Design and develop complete GUI applications that solve real-world problems using Java.	CEO2, CEO4	PLO5	Creating	C
	D- Transferable skills				
D1	Collaborate in development teams and communicate effectively during GUI software projects.	CEO2, CEO4	PLO7	Applying	D

*Bloom Taxonomy Levels:

Level #	1	2	3	4	5	6
Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

** Descriptor (National Qualification Framework Descriptors): K: Knowledge, S: Skill, C: Competency.

Program Learning Outcome (PLOs):

(PLOs)	JNQF Descriptors**		
	K	**S**	**C**

LO1-K	Knowledge of professional ethics, social responsibility, and the regulations governing them.	√		
PLO2-K	Understanding various programming techniques, the stages of software development, and the fundamental principles of security.	√		
PLO3-S	Skill in applying mathematical concepts to analyze and design algorithms and verify their correctness		√	
PLO4-S	Skill in using different programming languages and applying them to develop software and computer applications.		√	
PLO5-C	The ability to analyze, design, and develop effective and reliable computer programs that meet user requirements and adhere to professional ethics.			√
PLO6-C	The ability to keep up with continuous advancements in computer science, innovate, and work independently or as part of a team.			√
PLO7-D	The ability to work collaboratively, communicate effectively, and demonstrate teamwork spirit.			√

**** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)**

Weekly Schedule *(please choose the type of teaching)*

☒ **Face to Face (F2F)**

☐ **Hybrid** *(One – To - One)*

☐ **Online**

Schedule of Simultaneous and their Topics:

Week	First Lecture (F2F)	Second Lecture (F2F)	ILOs	PLOs	JNQF Descriptors*
1	Revision: Methods, Classes, Objects, Constructors	Introduction to Swing Package and GUI Class; Using JOptionPane for GUI Input	ILO1-K, ILO2-K	PLO1-K, PLO2-K	K
2	Swing Components: Input Dialogs, Confirm Dialogs	Swing Components: Buttons, Labels, Text Fields	ILO2-K, ILO3-S	PLO2-K, PLO4-S	**K, S**
3	Advanced Swing Components: ComboBoxes, Lists, Tables	Exception Handling in GUI Applications	ILO3-S, ILO4-S	PLO4-S	S
4	JPanel Class: Creating Panels and Layouts	Nested Panels and Complex Layout Management	ILO4-S	PLO4-S	S
5	Project Discussion	Review of Previous Chapters	ILO1-K to ILO4-S	PLO1-K to PLO4-S	**K, S**
6	Event Handling: KeyListener, MouseListener	Implementing Menus in GUI Applications	ILO3-S, ILO4-S	PLO4-S	S

7	Menu Implementation Continued; Practical Examples	Learning Through Projects: Menu-Based Applications	ILO4-S	PLO4-S	S
Midterm Exam (30%)					
9	Graphics: Drawing Shapes, Colors, Fonts	Graphics: Drawing Images, Custom Paint Methods	ILO5-S	PLO4-S	S
10	Animation: Timer Class, Moving Objects	Animation: Creating Simple Games with Animation	ILO5-S	PLO4-S	S
11	Project Discussion	Review of Previous Chapters	ILO1-K to ILO5-S	PLO1-K to PLO4-S	K,S
12	File Input and Output: Reading and Writing Text Files	File Input and Output: Reading and Writing Binary Files	ILO6-C	PLO5-C	C
13	File Input and Output: Using File Choosers	File Input and Output: Implementing Save and Open Features in Applications	ILO6-C	PLO5-C	C
14	Design and Implementation Project 1: WordPad Clone	Project Development: Implementing Text Editing Features	ILO6-C, ILO7-D	PLO5-C, PLO7-D	C,D
15	Design and Implementation Project 2: Paint Brush Clone	Project Development: Implementing Drawing Features	ILO6-C, ILO7-D	PLO5-C, PLO7-D	C,D
16	**Final Exam**				

* **K: Knowledge, S: Skills, C: Competency**

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Lecture.
- flipped learning.
- learning through projects.
- learning through problem solving.
- participatory learning

Course Policies:

A- Attendance policies:
The maximum allowed absences is 15% of the lectures.
B- Absences from exams and handing in assignments on time:
Midterm exam can be retaken based on approval of excuse by the instructor's discretion.
Not handing assignment on time will incur penalties.
C- Academic Health and safety procedures
D- Honesty policy regarding cheating, plagiarism, and misbehaviour:
Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.
E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) 3**0%**
- Midterm 30**%**
- Final Exam **40 %**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required Equipment:

- PC / Laptop with webcam and mic
- Internet Connection
- Access to the ZUJ E-Learning Platform at https://exams.zuj.edu.jo/
- E-learning plan
- Satisfaction questionnaires for online and face-to-face learning
- Software for e-learning
- Training

Assessment Tools Implemented in the Course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework
- Practice Labs
- Project
- Periodic reports for learning assessment
- Improvement plans for online or face-to-face teaching.
- Others…

Responsible Persons and their Signatures:

Course Coordinator	Dr. Assal Ali Alqudah	**Completed Date**	**4/ 5 / 2025**
		Signature	
Received by (Department Head)	Dr. Mohammad Abdullah	**Received Date**	/ /
		Signature	