Republic of Yemen

Ministry of Higher Education & Scientific Research

Council of Academic Accreditation & Quality Assurance of Higher Education(CAQA)

21 September University for Medical and Applied Sciences

Faculty of Engineering and Computer

Department of Information Technology

Program of Information Technology

Course Specification of

Visual Programming

Course Code. (07.01. 711)

2024

T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:	Reviewed by:	Head of the Department:	Quality Unit:	Dean
Dr.	Dr. -----			

I. General Information:

1.	Course Title:	Visual Programming				
2.	Course Code:	07.01. 711				
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/ Seminar	Lab	Clinical
		3	2	--	2	--
4.	Level/ Semester at which this Course is offered:	Level 3/ Semester 1				
5.	Pre –Requisite (if any):	Object-Oriented Programming (07.01. 706)				
6.	Co –Requisite (if any):	Non				
7.	Program (s) in which the Course is Offered:	Bachelor of Medical Information Technology				
8.	Language of Teaching the Course:	English				
9.	Location of Teaching the Course:	Faculty of Medical Technology				
10.	Prepared by:	Assoc. Prof. Malek Al-Jebry				
11	Date and Number of Approval by Council:					

II. Course Description:

This course introduces computer programming using the Visual Programming language with object-oriented programming principles. Emphasis is on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools. The main concepts discuss are: window-based, event-driven application design and implementation, data types, operators, properties, menus, file streaming, database file processing, and building visual components. Upon completion, students should be able to design, code, test, debug, and implement objects, using a visual environment through the use Visual C# programming language.

III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:		Referenced PILOs		
	A. Knowledge and Understanding:	**I, P or M/A**		
a1	Demonstrate understanding of various concepts and principles of visual programming and interface design		A1	
a2	Demonstrate knowledge of terminology, key elements, window components and user controls.		A4	
			A3	
	B. Intellectual Skills:			
b1	Analyze problems, and develop conceptual designs that solve those problems		B2	
b2	Design software solutions with effective and usable graphical interfaces		B4	
			B3	
	C. Professional and Practical Skills:			
c1	Use the different elements of a visual programming language as building blocks to develop correct, coherent programs.		C1	
c2	Develop applications to meet business need using the fundamental software development process, including design, coding, documentation, testing, and debugging.		C3	
			C3	

	D. Transferable Skills:			
d1	Work effectively individually, as a member, or leader of a team to design interfaces and implement computer applications		D2	
d2	Communicate effectively in writing and verbally with others when developing various software applications		D3	
			D3	
I= Introduced, P=Practiced or M/A= Mastered/Advanced				

	(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:		
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
a1	Demonstrate understanding of various concepts and principles of visual programming and interface design	▪ Lectures, Interactive class ▪ discussions, Tutorials.	▪ Written exams, assignment ▪ work, quizzes, submission of ▪ reports
a2	Demonstrate knowledge of terminology, key elements, window components and user controls.		
a3		▪	▪
	(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:		
	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
b1	Analyze problems, and develop conceptual designs that solve those problems	▪ Lectures, Tutorial, Interactive class ▪ discussions, and group work, ▪ presentation	▪ Written exams, Project, Case ▪ studies and assignment work.
b2	Design software solutions with effective and usable graphical interfaces		

	…	▪	▪

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
c1	Use the different elements of a visual programming language as building blocks to develop correct, coherent programs.	▪ Short lectures, case study, Laboratory ▪ experiments, Project, and group work, ▪ Field training, Drawing sessions	▪ Written exams, quizzes, Practical ▪ exam assignment and report ▪ submission
c2	Develop applications to meet business need using the fundamental software development process, including design, coding, documentation, testing, and debugging.		
	…	▪	▪
		▪	▪

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

	Course Intended Learning Outcomes	Teaching Strategies	Assessment Strategies
d1	Work effectively individually, as a member, or leader of a team to design interfaces and implement computer applications	▪ Group work, Self-study, Interactive ▪ class discussions, Tutorials, Seminar/ ▪ project/presentation, Laboratory ▪ experiments, Project, and Art Gallery	▪ Project presentation, Laboratory ▪ exam, Report/Project
d2	Communicate effectively in writing and verbally with others when developing various software applications		
	…	▪	▪

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction	– Introduction – Windows Forms – Event Handling – A Simple Event-Driven GUI – Delegates and the Event-Handling Mechanism – Control Properties and Layout	2	4	a1,a2
2	Graphical User Interfaces (GUI) I	– Labels, TextBoxes and Buttons – GroupBoxes and Panels – CheckBoxes and RadioButtons – PictureBoxes – ToolTips – NumericUpDown Control – Mouse-Event Handling – Keyboard-Event Handling – Menus – MonthCalendar Control – DateTimePicker Control – LinkLabel Control – ListBox Control – CheckedListBox Control – ComboBox Control	5	10	a1,a2
3	Mid-Term Theoretical Exam	Mid-Term Theoretical Exam	1	2	a1,a2,b1
4	Graphical User Interfaces (GUI)II	– TreeView Control – ListView Control	3	6	a1,a2,b2,d1

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
		– TabControl Control – Multiple Document Interface (MDI) Windows – Visual Inheritance – User-Defined Controls			
5	**Files and Streams**	– Introduction – Data Hierarchy – Files and Streams – Classes File and Directory – Creating a Sequential-Access Text File – Reading Data from a Sequential-Access Text File – Serialization – Creating a Sequential-Access File – Using Object Serialization - Reading and Deserializing Data from a Binary File	2	4	a1,a2,b1,b2,d1,d2
6	**Working with Databases**	– Introduction – ADO.NET – Connection – Command – DataReader – DataAdapter – DataSet – Parameters – Stored Procedures	2	4	b1,b2,c1

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
7	Final Theoretical Exam	Final Theoretical Exam	1	2	b1,b2,c1
Number of Weeks /and Units Per Semester			16	32	

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	- Windows Forms	1	2
2	- Event Handling	1	2
3	- Graphical User Interfaces (GUI) I (Labels to ComboBox)	4	8
4	- **Mid-Term Practical Exam**	1	2
5	- Graphical User Interfaces (GUI) II (TreeView to User-Defined Controls)	3	6
6	- Files and Streams (Sequential/Random File, Serialization, Deserialization)	4	4
7	- Working with Database	2	4
8	- **Final Practical Exam**	1	2
Number of Weeks /and Units Per Semester		15	30

VII. Assignments:

No.	Assignments	Week Due	Mark
1	Assignment 1: Build an application I	5	2

2	Assignment 2: Build an application I I	10	3
3	Assignment 3: Group Project (using all controls, files, and DB)	15	5
Total			--

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Assignments	5,10,15	10	10%
2	Quizzes 1 & 2	6,12	5	5%
3	Mid-Term Theoretical Exam	8	10	10%
4	Mid-Term Practical Exam	7	5	5%
5	Final Practical Exam including Project Presentation & Evaluation	15	10	10%
6	Final Theoretical Exam	16	60	60%
Total			100	100%

IX. Learning Resources:

- *Written in the following order:* Author, Year of publication, Title, Edition, Place of publication, Publisher

1- Required Textbook(s) (maximum two):

1- Deitel and Deitel, 2017 "Visual C# : How to Program", 6/e Edition, Prentice Hall / Pearson Education, ISBN 978-0-13-650154-0.

2- Essential References:

2- J.C. Bradley, A.C. Millspaugh, 2014, "Programming in C# .NET", McGraw-Hill, ISBN 0-07-121564-6.

3- Philip Conrod, Lou Tylee, 2017,"Beginning Visual C#: A Step by Step Computer Programming Tutorial", 15th Edition, Kidware Software

3- Electronic Materials and Web Sites etc.:

Websites:

4- C# documentation

https://docs.microsoft.com/en-us/dotnet/csharp/

5- Home and Learn - Visual C# .NET - Contents Page
https://www.homeandlearn.co.uk/csharp/csharp.html

X. Course Policies: (Based on the Uniform Students' By law (2007)

1	**Class Attendance:** Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	**Tardiness:** A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	**Exam Attendance/Punctuality:** No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	**Assignments & Projects:** Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	**Cheating:** Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	**Forgery and Impersonation:** Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	**Other policies:** The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

Faculty of Medical Technology

Department of Medical Information Technology

Program of Medical Information Technology

Course Specification of

Visual Programming

Course Code. (07.01. 711)

I. Information about Faculty Member Responsible for the Course:								
Name of Faculty Member:		Office Hours						
Location& Telephone No.:	––							
E-mail:	--@–.–	SAT	SUN	MON	TUE	WED	THU	

2024/2025

II. Course Identification and General Information:						
	Course Title:	Visual Programming				
	Course Code:	07.01. 711				
	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/Seminar	Lab	Cli

						nical
		3	2	--	2	--
	Level/ Semester at which this Course is offered:	Level **3**/ Semester 1				
	Pre –Requisite (if any):	**07.01.** 706				
	Co –Requisite (if any):	non				
	Program (s) in which the Course is Offered:	Bachelor of Medical Information Technology				
	Language of Teaching the Course:	English				
	Location of Teaching the Course:	Faculty of Medical Technology				
	Prepared by:	Dr.				
11	**Date and Number of Approval by Council:**					

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IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

	A. **Knowledge and Understanding:**
a1	Demonstrate understanding of various concepts and principles of visual

	programming and interface design
a2	Demonstrate knowledge of terminology, key elements, window components and user controls.
	B. **Intellectual Skills:**
b1	Analyze problems, and develop conceptual designs that solve those problems
b2	Design software solutions with effective and usable graphical interfaces
	C. Professional and Practical Skills:
c1	Use the different elements of a visual programming language as building blocks to develop correct, coherent programs.
c2	Develop **applications to meet business need** using the fundamental software development process, including design, coding, documentation, testing, and debugging.
	D. Transferable Skills:
d1	Work effectively individually, as a member, or leader of a team to design interfaces and implement computer applications
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I= Introduced, P= Practiced or M/A= Ma	

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V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction	– Introduction – Windows Forms – Event Handling – A Simple Event-Driven GUI – Delegates and the Event-Handling Mechanism – Control Properties and Layout	2	4
2	Graphical User Interfaces (GUI) I	– Labels, TextBoxes and Buttons – GroupBoxes and Panels – CheckBoxes and RadioButtons – PictureBoxes – ToolTips – NumericUpDown Control – Mouse-Event Handling – Keyboard-Event Handling – Menus – MonthCalendar Control – DateTimePicker Control – LinkLabel Control – ListBox Control – CheckedListBox Control	5	10

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		– ComboBox Control		
3	**Mid-Term Theoretical Exam**	– Mid-Term Theoretical Exam	1	2
4	**Graphical User Interfaces (GUI)II**	– TreeView Control – ListView Control – TabControl Control – Multiple Document Interface (MDI) Windows – Visual Inheritance – User-Defined Controls	3	6
5	**Files and Streams**	– Introduction – Data Hierarchy – Files and Streams – Classes File and Directory – Creating a Sequential-Access Text File – Reading Data from a Sequential-Access Text File – Serialization – Creating a Sequential-Access File – Using Object Serialization – Reading and Deserializing Data from a Binary File	2	4
6	**Working with Databases**	– Introduction – ADO.NET – Connection – Command – DataReader – DataAdapter – DataSet	2	4

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		– Parameters Stored Procedures		
7	Final Theoretical Exam	– Final Theoretical Exam	1	2
Number of Weeks /and Units Per Semester			16	32

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	- Windows Forms	1	2
2	- Event Handling	1	2
3	- Graphical User Interfaces (GUI) I (Labels to ComboBox)	4	8
4	- **Mid-Term Practical Exam**	1	2
5	- Graphical User Interfaces (GUI) II (TreeView to User-Defined Controls)	3	6
6	- Files and Streams (Sequential/Random File, Serialization, Deserialization)	4	4
7	- Working with Database	2	4
8	- **Final Practical Exam**	1	2
Number of Weeks /and Units Per Semester		15	30

VI. Teaching and Learning Strategies of the Course:

- Interactive lectures,
- Problem solving,
- Tutorials,
- Seminar/ Project/Presentation,
- Teamwork,

- Laboratory based session,
- Interactive Class Discussions,
- Directed Self- Study,
- Exercises and Home Works,
- Field Visits.

VII. Assessment Methods of the Course:

- Coursework Activities
- Written tests
- Written assessments such as multiple-choice questions and Quizzes
- Report/Project/ Practical Lab Sessions
- Home works and assignments.
- Presentations

VIII. Assignments:

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IX. Schedule of Assessment Tasks for Students During the Semester:

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X. Learning Resources:

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XI. Course Policies: (Based on the Uniform Students' Bylaw (2007)

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