Course Specification

(Bachelor)

Course Title: **Visual Programming**

Course Code: **IT223**

Program: **Information Technology**

Department: **Information Technology**

College: **College of Computer and Information Sciences**

Institution: **Majmaah University**

Version: **V2023**

Last Revision Date: **04 November 2023**

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: 3 (3,0,1)

2. Course type

A.	☐University	☐ College	☒ Department	☐Track	☐Others
B.	☒ Required			☐Elective	

3. Level/year at which this course is offered: (4)

4. Course general Description:
This course gives students the basis for developing visual applications. Using a selected visual programming language, Introduces computer programming using the Visual BASIC 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 such as the class debugger, OO design and programming techniques, exception handling, modular programming, Visual BASIC Controls and Events, GUI design rules, event handling, multithreading, swing components and model, networking (Client Server Model), and access to databases

5. Pre-requirements for this course (if any): CS131

6. Pre-requirements for this course (if any):

7. Course Main Objective(s):
1. Use the different elements of a visual programming language as building blocks to develop correct, coherent programs.
2. Analyze problems, develop conceptual designs that solve those problems, and transform those designs to Visual Programs with VB.Net.
3. Program using the fundamental software development process, including design, coding, documentation, testing, and debugging.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	15
5.	**Others (specify)**	
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Program using the fundamental software development process, including design, coding, documentation, testing, and debugging.	K1	Classroom Teaching	Class Test, Mid Exam, Final Exam
1.2				
...				
2.0	**Skills**			
2.1	Analyze problems, develop conceptual designs that solve those problems, and	S1	Classroom Teaching	Class Test, Mid Exam, Final Exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	transform those designs to Visual Programs with VB.Net			
2.2	Use the different elements of a visual programming language as building blocks to develop correct, coherent programs.	S2	Mini Project, Lab Exercises	Lab Based Assignments, Mini Project
2.3	Use the different elements of a visual programming language as building blocks to develop correct, coherent programs	S3	Oral /Written Communication, Seminar	Group Assignments, Mini Project
3.0	**Values, autonomy, and responsibility**			
3.1				
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Program design and implementation - Develop visual applications (VB	4
2.	Essential VB, variables, data types, commenting	4
3.	Arithmetic operators and expressions	4
4.	Decision Structures (ifs and select case)	4
5.	Loops (while, for) & Exception handling	4
6.	Loop applications (summation, counting)	8
7.	Functions (val and ref parmaters) & Swing components and model	8
8.	Strings & Arrays	8
9.	Windows applications using forms, controls, and events	8
10.	Files, Multithreading, Networking & Databases	8
Total		**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Final Exam	12	40
2.	Midterm Exam	6	20
3.	HomeWorks	2-10	10
4.	Quiz	2-10	10
5.	Mini Project	7-10	10
6.	Exercises	5-10	10

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Zak, Diane, Programming with Microsoft Visual Basic 2015. Seventh Edition, Course Technology, Cengage Learning, 2016. ISBN:978-1-285-86026-8
Supportive References	
Electronic Materials	Blackboard, Coursera
Other Learning Materials	Coursera

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms, laboratories
Technology equipment (projector, smart board, software)	projector, smart board, Visual Studio
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	CLO Survey
Effectiveness of Students assessment	Instructor	Quiz, Mid exam, Assignments, Exercises, Final Exam and Indirect Survey

Assessment Areas/Issues	Assessor	Assessment Methods
Quality of learning resources	Convener, instructors, HOD	Regular follow ups
The extent to which CLOs have been achieved	Instructor, TA	Performance in the exam for a particular CLO(s)
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	