هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Elective-1**
Course Code:	**315 COMP-3**
Program:	**Bachelor in Computer Science**
Department:	**Computer Science**
College:	**College of Computer Science and Information Technology**
Institution:	**Jazan University**
Version:	**V2**
Last Revision Date:	**12 September 2021**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3				
2. Course type					
a.	University ☐	College ☐	Department☐	Track☐	Others☐
b.	Required ☐	Elective☒			
3. Level/year at which this course is offered:	Level 10/Year 4				
4. Course general Description: This course introduces the .Net framework and Visual C# language basic concepts (Statements, Exceptions, Methods, Arrays, Class, Objects, Interface, and Namespaces) to develop windows applications. This course also covers C#'s event driven programming concepts, windows forms, controls, multithreading, and data handling. Also introduces the web application development with ASP.NET.					
5. Pre-requirements for this course (if any): None					
6. Co- requirements for this course (if any): None					
7. Course Main Objective(s): ♦ Define the .NET Framework and its components to the students. ♦ Explain the basic problem-solving techniques using different control structures and procedures to the students. ♦ Describe how to analyze a problem and propose a solution to fix that problem. ♦ Illustrate how to develop database application using various GUI controls and ADO.NET. ♦ Demonstrate how to apply the principles of programming in application development. ♦ Explain how to design and develop application in a team with distributed responsibilities.					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	44	80%
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning		

No	Mode of Instruction	Contact Hours	Percentage
4.	Distance learning	11	20%

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	22
2.	Laboratory/Studio	22
3.	Field	
4.	Tutorial	
5.	Others (specify)	8
	Total	52

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	**Describe** the .NET framework and its components	K1	Class lectures and lecture notes	Midterm/ Assignment 1 / Final Exam/Final Lab
1.2	**Explain** the basic problem solving techniques using different control structures and procedures.	K1	Class lectures and lecture notes	Midterm/ Assignment 1 / Final Exam/Final Lab
…				
2.0	Skills			
2.1	**Analyze** the problem and propose a solution to fix the problem.	S1	Class lectures/ lecture notes/ Case studies / Brainstorming	Final Exam/ Assignments 1 /Group Assignments
2.2	**Develop** Windows applications and Web applications using various GUI controls and ADO.NET	S3	Class lectures/ lecture notes/Case studies	Final Exam/ Group Assignments

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.3	**Communicate** effectively in a variety of professional contexts for team members and other audiences.	S5	Class lectures/ lecture notes/Case studies	Final Exam/ Group Assignments
3.0	Values, autonomy, and responsibility			
3.1	**Identify** the need for and an ability to engage in continuing professional development and entrepreneurship in the field of computer applications development.	V3	Small group discussion / Brainstorming/ Class discussion to train students to think independently	Group Assignments/ Final Exam
….				
…				

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction, Control Statements** • C# • Even-Driven Programming • Visual Programming • Microsoft .Net Framework • Common Language Runtime (CLR) • Platform Independence • Language Interoperability • A Sample C# App • Formatting Text • Adding Integers **Control Structures** ○ Selection Structures in C# ○ Repetition Structures in C# ○ if Single Selection ○ if…else Double Selection ○ Conditional Operator	4T+4P

	○ Data Conversion ○ Operators ○ ***While*** Repetition Statement ○ ***for*** Repetition Statement ○ ***do…While*** Repetition Statement ○ ***switch*** Multiple-Selection Statement ○ ***break and continue*** Statements	
2.	**Classes, Objects, and Methods** • Methods • Classes • Objects • Method Calls • Attributes • Declaring a class with a Method • Access Modifiers ***public*** & ***private*** • **static** Methods • Method Overloading • Passing Arguments: **Pass-by-Value** • vs. **Pass-by-Reference** • **ref** and **out** Parameters • **this** Keyword • Garbage Collection and Destructors (Self Study) • Static class Members • readonly Instance Variables • Object Initializers • Base Class and Derived Class • protected Members • Class Object • Interfaces • Virtual Methods and Overriding • Abstract Classes and Methods • sealed Methods and Classes • Interfaces Vs. Abstract Classes	4T+4P
3	**Arrays, String and Exception Handling** • Arrays • Declaring and Creating Arrays • Examples Using Arrays • Creating and Initializing an Array • Using an Array Initializer • Summing the Elements of an Array • **foreach** Statement • Multidimensional Arrays	2T+2P

	• Jagged Arrays • Exception Handling • Introduction • Example: **Handling DivideByZeroExceptions** • Enclosing Code in a **try** Block • Catching Exceptions • Uncaught Exceptions • **finally** Block • Fundamentals of Char and Strings • string Constructors • Class StringBuilder	
4	**Graphical User Interface with Windows Forms** • Introduction • Windows Forms • Event Handling • A Simple Even-Driven GUI • Delegates and the Event- Handling • Labels, TextBoxes and Buttons • GroupBoxes and Panels • CheckBoxes and RadioButtons • Mouse-Event Handling • Keyboard-Event Handling • Menus • ListBox Control • MDI (Self Study)	4T+4P
5	**Multithreading and ADO.NET** • Multithreading Fundamentals • The Thread Class • Creating and Starting a Thread • Determining When a Thread Ends • Synchronization • ADO.NET • ADO vs. ADO.NET • ADO.NET namespaces • Connection Object • Command Object • DataReader Object • DataAdapter Object • DataSet Object • DataTables • DataView Object	4T+4P
6	**Web App Development with ASP.NET**	2T+2P

	• Introduction • Web Basics • URIs and URLs • Multitier App Architecture • Information Tier • Business Logic • Client Tier • Cookies	
Total		20T+20P

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm Exam	6th-7th week	15%
2.	Assignment I	3rd week	10%
3.	Assignment II (Case Study/ Group assignment)	6th-7th week	15%
4.	Lab Exam + Lab Assignment	As per schedule	20%
5.	Final Theory Exam	As per schedule	40%

*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	Visual C# and Databases, Philip Conrod & Lou Tylee, Kidware Software, 16th Edition, 2019, ISBN: 9781951077082
Supportive References	**Visual C# How to Program,** Global Edition**,** Harvey Deitel and Paul Deitel , Pearson, 6th Edition, 2016, ISBN: 9781292153469
Electronic Materials	• URL: https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/ • URL: https://msdn.microsoft.com/en-us/library/aa309390(v=vs.71).aspx • URL: https://msdn.microsoft.com/en-us/library/aa286484.aspx URL: https://msdn.microsoft.com/en-us/library/aa286485.aspx
Other Learning Materials	Handouts

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom equipped with projector, whiteboard, and sufficient seating arrangements. Lab with software installed and individual computer terminal for each student.
Technology equipment (projector, smart board, software)	Whiteboard and projector for classroom and lab. Following software for lab work: Visual Studio 2017 SQL Server / MS. Access
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Course evaluation survey form
Effectiveness of students assessment	TL/HOD	Classroom monitoring
Quality of learning resources	Track leaders / CRC	Review meetings and star rating with suggestions for further modification and improvements
The extent to which CLOs have been achieved		
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	**Department Council**
REFERENCE NO.	
DATE	15-10-2022