MAKERERE UNIVERSITY BUSINESS SCHOOL

FACULTY OF COMPUTING AND INFORMATICS
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEMESTER TWO: ACADEMIC YEAR 2024/2025
COURSE OUTLINE

Programme: Bachelor of Business Computing
Year of study: Two
Course Name: Business Application Programming
Course Code: BUC2227
Credit Units: 5
Credit Hours: 75
Venue: ADB LABS 3 & 4

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COURSE DESCRIPTION

This course aims to improve students programming skills through application and extension of programming theory and problem solving skills within the business domain. The course will reinforce the Object-oriented programming concepts and constructs to analyze, design, and implement Windows-based business applications that fully utilize the Graphical User Interface tools and techniques. Develop a fully functioning enterprise information system that utilizes advanced programming techniques for interacting with the database. Though a variety of languages and tools exist today, the .NET environment and MySQL database server will be used in this period of study.

Course Objectives

The objectives of this course are to;

- To equip learners with problem-solving and logic skills to solve business and education applications using sequence, repetition, and choice structures.
- To provide students with the knowledge needed to plan graphical-user business applications using pseudo code, flowcharts, and/or IPO charts to produce user-friendly computer programs.
- To introduce students to the understanding of OOP analysis, design issues and techniques in evaluate business applications both from the standpoint of the developer and the business user;
- To introduce students to understanding the debugging techniques and program errors in business applications.

Learning Outcomes

Upon completion of this course, a student will be able to:

- Use problem-solving and logic skills to solve business and education applications using sequence, repetition, and choice structures.
- Plan graphical-user business applications using pseudo code, flowcharts, and/or IPO charts to produce user-friendly computer programs.
- Apply the knowledge of OOP analysis, design issues and techniques in evaluating business applications both from the standpoint of the developer

Detailed Course Content

Week	**Topics**	**Lesson Details**	**Hours**
Week 1.	An introduction to .NET	• An Introduction to .NET • An Introduction to Visual Studio Environment • Creating Applications & Writing Code • Object-Oriented Application Development using .NET • Visual program design and development process	5
Week 2 & 3.	User Interface Design and Usability using XAML	• Essential Skills in Application Development • User interface design principles • Usability heuristics and accessibility guidelines • Practically designing the User Interface using VB controls • Setting form control properties	10
Week 4 & 5.	Variables, Constants & Business Calculations in .NET	• Developing and assessing Pseudocode • Variables, constants, and controls in .NET • Various data types in .NET • Declare and perform calculations using variables and constants in .NET • Variable Scoping in .NET • Convert between data types using implicit and explicit conversions • Format values for output • Use Try/Catch blocks for error handling in .NET • Display message boxes with error messages in .NET • Accumulate sums and generate counts in .NET	10
Coursework Test One			
Week 6, 7 & 8.	Controlling the flow of programs in VB	• Using selection and decision making control structures to control the flow of logic (IF, IF-else, Nested IF-else, Switch-case statements) • Using iterative or loop-control statements (the while loop, do-while loop and the for loop to control the flow of the program) • Using Evaluate conditions using comparison operators	15

		• Perform validation on numeric fields • Test the Checked property of radio buttons and check boxes • Use one event procedure to respond to the events for multiple controls and determine which control caused the event • Call an event procedure from another procedure • Create message boxes with multiple buttons and choose alternate actions based on the user response •	
Week 9.	Loops	• Do/loop format • Do while/loop • Do until/loop • Do/loop while	10
Week 10.	Arrays and data files	• Control arrays • Frames • List boxes	5
Coursework Test Two			
Week 11 & 12.	Application Testing And Deployment	• Unit-test application code • System-test applications • Debug projects using breakpoints, stepping program execution, and displaying intermediate results • Deploy Applications to CD, DVD, web and FTP servers	10
Week 13.	Business Application Project	• Integration of knowledge	10
Final Examination			
	Total Hours		**75**

Mode of Delivery

- Lectures (face to face and online)
- Group and class discussions
- Tutorials

Mode of Assessment

- Course work 30%
- End of semester examination 70%

Reading List

- Bradley, J., &Millspaugh (2008), A. Programming in C#, McGraw-Hill.

- Bradley, J., &Millspaugh (2008), Advanced Programming Using Visual Basic 2008, McGraw-Hill.
- Farrell, Joyce (2017), An Object-Oriented Approach to Programming Logic and Design (3rd Edition).
- Delamater. M & Boehm. A (2012), ASP.NET 4.5 Web Programming with C#
- Joyce. F (2017). An Object-Oriented Approach to Programming Logic and Design, (3rd Edition).
- Liang. Y. D (2007). Introduction to Java Programming: Comprehensive Version, (6th Edition), Prentice Hall.
- Robert. S (2008). Introduction to Programming in Java: An Interdisciplinary Approach, (5th Edition).
- Malik, D.S (2008). Java Programming: From Problem Analysis to Program Design, (3rd Edition.
- Lewis. J & Loftus. W (2007). Java Software Solutions: Foundations of Program Design, (5th Edition)