
AMOUD UNIVERSITY



FACULTY OF COMPUTING AND INFORMATICS

FACULTY OF COMPUTING AND INFORMATICS COURSE OUTLINE

Course Code: BIT 6314, BSE 6411, BBI 6316
Course Title: Application Programing II (C#)
Contact Hours: 45 **Credit Units:** 3 **Duration:** 15 Weeks
Facilitator: Mr. Adam M. Abdillahi +252634284654,
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Course Background

Application Programming II (C#) builds on introductory programming knowledge by focusing on the creation of Windows desktop and enterprise applications using the C# programming language. It emphasizes object-oriented programming, graphical user interface development, event handling, and database connectivity. With C# being a widely adopted language in both academic and industry environments, this course equips students with the skills required to design and implement professional-grade applications using the .NET framework.

Course Aims

The main aim of this course is to advance students' programming skills in C# and prepare them for real-world application development. Specifically, the course seeks to:

- Strengthen students' understanding of C# syntax, structures, and error handling.
- Provide practical experience in building Windows-based graphical applications.
- Introduce database connectivity and data manipulation in C# applications.
- Foster problem-solving and debugging skills within the .NET framework environment.

.Course Objectives

By the end of this course, students should be able to:

1. Develop and test a Windows application with a graphical user interface using C#.
2. Implement object-oriented programming concepts (classes, inheritance, and polymorphism) in application development.
3. Integrate data storage and retrieval (using SQL) into C# applications.
4. Deliver a mini-project (desktop application) that demonstrates proper coding standards, exception handling, and database interaction.

Course Description

This course provides students with the programming skills needed to develop Windows desktop applications using the C# language and the .NET framework. Students will learn to apply object-oriented principles, build and manage user interfaces, handle events and exceptions, and integrate databases into their applications. The course also covers advanced features such as asynchronous operations, reusable components, encryption, and performance optimization. By the end of the course, students will be able to design, code, test, and deploy small-to-medium scale applications in C#.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Knowledge: Explain the fundamental concepts of C# and its role in Windows application development.
- Skills: Write, debug, and optimize C# programs using control structures, data structures, and OOP techniques.
- Application: Develop GUI-based applications that interact with databases and external components.
- Attitudes: Demonstrate good programming practices, including modular design, code readability, and ethical responsibility in software development.

Course Content

Period	Content	Specific Content	Duration
1	Introduction to the course	Course overview, course objectives, course outline, learning outcomes, methods of teaching and evaluations/assessment, recommended readings, and other key information such as class rules.	1

Period	Content	Specific Content	Duration
2	Chapter 1: Introducing Microsoft Visual C#	History and background of C#, Introduction to Graphical User Interface, Getting Started with Visual Studio Environment, Installation Visual Studio.	1
3	Chapter 2: Variables and Data types	Variable Declaration and Variables Rules, Introduction to Data types in C#, Global and Local Variable.	1
4	Chapter 3: Decision Structures and the If Statements	The if-else Statement, Nested if statements, Bool Variables and Flags, Logical Operators, Athematic Operators, Switch Statements, Nested Switch Statements	1
5	Chapter 4: Controls Statement and Loops	Overview of Loops, While loop, Nested while loop, Do-while loop, For loop, Nested for loops	1
6	Chapter 5: Array	Types of an array , Loop through an array, Sort array, Multidimensional array	1
7--8	Chapter 6: Understanding Classes and Objects	Object- and Component-Oriented Programming, Classes in C#, Scope and Accessibility, Methods and Properties, Nested and Partial Classes, Static Classes and Data, Object Initializers	2
9-10	Chapter 7: Writing methods and applying scope	Creating Method, Applying Scope, Writing Method, Using optional parameters and named arguments.	2
11-12	Chapter 8: Working with Databases	Understanding SQL and Creating tables in SQL using DML Statements in SQL	2
13- 15	Mini Project Development & Review	Students design and present a small application demonstrating learned concepts.	3

Methodology

Lectures, demonstrations, class discussions, individual and group activities will be employed. Power point presentations and course note as well as textbook will be used.

Evaluation

Tests/examinations/assignments must be written and submitted at the time specified. Failure to do so will result in a mark of "0", unless an illness/emergency can be proven with appropriate documentation. There will be coursework with 40% and end of semester examination with 60%. There will be no sit in tests. Students will work on case assignments and produce written papers. The passing grade is 50%. The papers will be

evaluated based on depth of research, soundness of argument, theoretical and practical content, and clarity of presentation. Submit assignments at the beginning of the class in which they are due. You must keep a photocopy of your assignment.

Attendance

There will be an individual assignment worth 10%, attendance worth 10%, and mid-term examination worth 20% and the end-of-course examination worth 60% of the course. As a result, the passing grade is 50%. Students will set examinations of their own subject matters and produce written papers. The papers will be judged on the depth of their theoretical and practical content, as well as the clarity with which they are presented.

Participation

All students are expected and obliged to attend classes, presentations other course activities and examinations. Absence of 3 consecutive classes must be justified with reasonable attempts.

Plagiarism

Students are highly encouraged to participate during each class through sharing ideas, asking and answering questions and discussions.

References

1. *Programming C# 10.0* by Ian Griffiths
2. *C# 12 in a Nutshell: The Definitive Reference* by Joseph Albahari

Effective: 15 September, 2026

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