Department of Mathematics

College of Science

Salahaddin University-Erbil

Subject: Computer Skill

Course Book : First year

Lecturer's name: Swar Omer Ahmed

Academic Year: First Semester- 2023-2024

Course Book

1. Course name	Computer Programming
2. Lecturer in charge	Swar Omer Ahmed
3. Department/ College	Mathematics / Science
4. Contact	e-mail: swar.ahmed@su.edu.krd Tel: +9647504779948
5. Time (in hours) per week	Theory: 2 Practical: 2
6. Office hours	Tuesday 12:30-1:30 Or Wednesday 12:30-1:30
7. Course code	
8. Teacher's academic profile	Swar Omer Ahmed, PhD in Applied Statistics, Mathematics Department- College of Science- Salahaddin University-Erbil. Qualification PhD In Applied Statistics (2020) Salahaddin University-Erbil. M.Sc. In Statistics (2007), Mustansiriyah University – Baghdad. B.Sc. in Mathematics (1999), Salahaddin University-Erbil. Scientific Title: 2007-2015: Assistant Lecturer, 2015-2023: Lecturer, 2023- Present: As**sistant Professor**
9. Keywords	Algorithm and Flowchart, Variable and declarations , condition statements, Loop statements, Array.

10. Course overview:

This course aims at introducing first-year undergraduate mathematics students with basic computer programming. The course assumes no prior knowledge about computer systems and any knowledge of computer programming. Important programming concepts required in most modern programming languages, including program design, data types, conditional and iterative control flows, creating and using subroutines (methods), and arrays, are covered in this course. C++ programming language is chosen for introducing these concepts and demonstrations of real source code. Solving problems using recursive approaches is also introduces in order to expand students' perspective beyond iterative approaches familiar with most novice programmers.

11. Course objective: This semester helps students examine computer language. Studies outline stages in software with develop programming by problem-solving, analysis using

C++ language and implementing defined practices by writing simple programs using assignment, repetition, decision structures and develop effective testing.

In this semester students will take a better understanding of a C++ language topics:

First chapter explain Algorithm and flowchart and second chapter focuses on introduction to C++ language, and the other chapters we describe the codes of C++. That makes the student to be able to write a good program for many problems that help them in other subjects.

12. Student's obligation

- **a.** Students reign an commitment to come on time and remain in the classroom for the duration of scheduled classes and Labs.
- **b.** Nothingness speaks students with each other during lecture.
- **c.** All devices must be turned off.
- **d.** When teacher ask question, Students will be to rise your hand before answer his question.
- **e.** Students own an obligation to write tests and final examinations at the times scheduled by the teacher or the College.

13. Forms of teaching

I give hard copy of My lecture notes to students before coming lecturer time. first I remember students about previous lecture, and then I start new lecture. At the end of the lecture give a homework for the next lecture. During this process I am use presentation and whiteboard.

14. Assessment scheme

1. ***Practical:*** 15% C++ assignments and quizzes in Lab.
2. ***Theoretical:*** 25% (Midterm exams and other activities).
3. ***Final Exam: Practical:*** 15% and ***Theoretical:*** 45% .

15. Student learning outcome:

- **a.** Some knowledge about the history of C++ programming language (who is the inventor of C and C++ programming language?).
- **b.** The definition of C++ programming language (what is C++, why we are studding C++).
- **c.** The definition of high and low level programming languages.

d. How to run a C++ program, the general style of C++ programming Language, and writing a first C++ code.

e. What are C++ operators, how to use the operators?

f. Writing programs with (if and else, switch, while, do while, and for) control structures.

g. What are arrays, how to initialize arrays, and how to define multidimensional arrays, also how to use arrays as a function.

16. Course Reading List and References:

Any Book or Internet References of C++

17. The Topics:	Lecturer's name
Chapter 1: An Overview of the Computer System **Chapter 2: Number System** **Chapter 3 (Algorithm and Flowchart)** **Algorithm.** **Flowchart.**	This Column are not applicable because timetables of holidays will be change that is I cannot Determine a week by week review of the topics.

18. Practical Topics (If there is any)	
Chpter One: Introduction To C++. **Chapter Two:** Some important Commands of C++ **Chapter Three:** Some basic Concepts of C++ program. **Chapter Four:** Some Programs to solve mathematics problem.	This Column are not applicable because timetables of holidays will be change that is I cannot Determine a week by week review of the topics.

19. Examinations:

Questions in the examination will be arranged the matching mode by way of the examples and exercises that I give delivered in the lecture notes.
Sometimes will be have extra mark in examination for worthy students.

20. Extra notes:

21. Peer review