



Course Specification

— (Bachelor)

Course Title: Programming 1

Course Code: CS 131

Program: Computer Science/Information Technology

Department: Computer Science

College: College of Computer and Information Science

Institution: Majmaah University

Version: 2

Last Revision Date: 11 September 2023



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A. General information about the course:

1. Course Identification

1. Credit hours: 4 (3,2,0)

2. Course type

A. University College Department Track Others
 B. Required Elective

3. Level/year at which this course is offered: (Level 2)

4. Course general Description:

This course introduces the students to the fundamentals of programming concepts with their implementation in the C++ programming language. It introduces students to structured, top-down programming design and implementation. This course covers the following topics: problem solving techniques using algorithms and flowcharts, variables, data types, operators, conditional statements, loop structures, functions, arrays, pointers, strings.

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

N.A.

6. Co-requisites for this course (if any):

N.A.

7. Course Main Objective(s):

The objectives of the course are: learn basic structured programming concepts, divide a problem into its logical components, gain knowledge of input/output statements, if-then-else statements, while and for loops, functions, gain knowledge of built-in data types, arrays and pointers to solve programming problems, and construct error-free C++ programs.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	75%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		





No	Mode of Instruction	Contact Hours	Percentage
4	Distance learning	15	25%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	30
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		75

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	CLO1- Identify the basic components of a computer system	K1	Classroom Teaching	Quiz, Mid Exam, Final Exam
2.0	Skills			
2.1	CLO2- Design an algorithm to solve a given problem using the top-down design approach	S1	Classroom + Lab based Teaching	Quiz, Mid Exam, Lab, Assignments, Final Exam
2.2	CLO3- Understand the concept of using functions to increase modularity and reusability	S1	Classroom + Lab based Teaching	Quiz, Mid Exam, Lab, Assignments, Final Exam
2.3	CLO4- Understand and use the three basic programming structures: sequence, selection, repetition.	S1	Classroom + Lab based Teaching	Quiz, Mid Exam, Lab, Assignments, Final Exam



Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.4	CLO5- Use arrays, strings and pointers to manipulate data	S1	Classroom + Lab based Teaching	Quiz, Mid Exam, Lab, Assignments, Final Exam
3.0	Values, autonomy, and responsibility			
3.1				
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to Computers	10
2.	Problem solving techniques-Flowchart, algorithms	10
3.	Introduction to C++, Variables ,Data types, Operators	5
4.	Conditional statements	5
5.	Loops concepts I	5
6.	Loops concepts II	5
7.	Functions I	5
8.	Functions II	5
9.	Arrays I	5
10.	Arrays II	5
11.	Pointers	5
12.	Strings	5
13.	Programing Examples	5
Total		75





D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz 1	4	5%
2.	Midterm Exam	8	20%
3.	Quiz 2	12	5%
4.	Programming Assignments	14	10%
5.	Final Lab exam	14	10%
6.	Lab Assignments	3,5,7,9	10%
7.	Final exam	15	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	Dietel & Dietel, "C++: How To Program", Prentice Hall, 10th edition (2017).
Supportive References	The C++ Programming Language: Special Edition, Bjarne Stroustrup, Addison-Wesley Professional, 2013. C++ Programming: From Problem Analysis to Program Design, De D. S. Malik, Cengage Learning, 2012
Electronic Materials	<ul style="list-style-type: none"> • https://www.w3schools.com/cpp/cpp_getstarted.asp • https://cplusplus.com/doc/tutorial/ • https://www.tutorialspoint.com/cplusplus/index.htm
Other Learning Materials	Dev C++ IDE or Visual studio Software

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and laboratories
Technology equipment (projector, smart board, software)	PC with Windows/Linux OS, Projector, Smart Board Dev C++ IDE or Visual Studio Software
Other equipment (depending on the nature of the specialty)	



F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, HoD	Indirect
Effectiveness of Students assessment	Instructor	Direct
Quality of learning resources	Instructor, Quality Unit	Direct
The extent to which CLOs have been achieved	Quality Unit	Direct
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	COMPUTER SCIENCE DEPARTMENT
REFERENCE NO.	
DATE	

