



Course Specifications

Course Title:	Programming 1
Course Code:	CSI 211
Program:	Computer Science and Information Technology
Department:	Computer Science and Information
College:	College of Science at Az Zulfi
Institution:	Majmaah University

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A. Course Identification

1. Credit hours:			
2. Course type			
a.	University <input type="checkbox"/>	College <input type="checkbox"/>	Department <input checked="" type="checkbox"/>
b.	Required <input type="checkbox"/>	Elective <input type="checkbox"/>	Others <input type="checkbox"/>
3. Level/year at which this course is offered:			
4. Pre-requisites for this course (if any):			
Computer Skills (PCOM 113)			
5. Co-requisites for this course (if any):			

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	48	80 %
2	Blended	6	10%
3	E-learning		0 %
4	Distance learning		0 %
5	Other	6	10%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	
4	Others (specify)	
	Total	60

B. Course Objectives and Learning Outcomes

1. Course Description

This course introduces the student to object-oriented programming through a study of the concepts of program specification and design, algorithm development, and coding and testing using a modern software development environment. Students learn how to write programs in an object-oriented high level programming language



2. Course Main Objective

This course introduces the students to basic programming concepts and constructs. Topics include: control structures, functions, recursion, arrays, pointers and strings of the C++ programming language. The course introduces students to structured, top-down programming design and implementation. This course should serve as a foundation for programming to the students in the program.

The purpose of this course is to:

1. Provide students with the ability to develop C++ using pseudo code and flow chart and structured programming design (design, write, debug, comment and modify a C++ program).
2. Acquaint students the ability to understand the concept of data types, variables and assignments.
3. Introduce students to the object oriented environment.
4. Enable students to be efficient in their work.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Construct error free C++ programs.	
1.2	Divide a problem into its logical components.	
1.3	Design and code small to medium sized problems from the start using C/C++ constructs, such as input/output statements, if-then-else statements, while and for loops, functions.	
1...		
2	Skills :	
2.1	Apply knowledge of computing and mathematics appropriate to the discipline.	
2.2	Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs.	
2.3		
2...		
3	Values:	
3.1	Analyze a problem, and identify and define the computing requirements appropriate to its solution.	
3.2	Understand professional, ethical, legal, security, and social issues and responsibilities.	
3.3		
3...		



C. Course Content

No	List of Topics	Contact Hours
1	Introduction to computers and C++: Introduction, Computers and the Internet in Industry and Research, Hardware and Software, Moore's Law, Computer Organization, Data Hierarchy, Machine Languages and Typical C++ Development Environment.	8
2	Introduction to C++ Programming: First Program in C++ , Input / Output and Operators, Memory Concepts ,Arithmetic, Decision Making: Equality and Relational Operators	8
3	Introduction to Classes, Objects and Strings: Defining a Class with a Member Function, Defining a Member Function with a Parameter, Data Members, set Member Functions and get Member Functions, Initializing Objects with Constructors.	8
4	Control Statements (Part 1): If Selection Statement, if...else Double-Selection Statement, while Repetition Statement, Counter-Controlled Repetition, Assignment Operators, Increment and Decrement Operators .	12
5	Control Statements (Part 2): For Repetition Statement, do...while Repetition Statement, switch Multiple-Selection Statement, break and continue Statements, Logical Operators.	8
6	Functions and an Introduction to Recursion: Function Definitions with Multiple Parameters, Function Prototypes and Argument Coercion, Scope Rules, Function Call Stack, Inline Functions, References and Reference Parameters, Default Arguments, Function Overloading, Function Templates, Recursion.	8
7	Array and vector: Arrays, Declaring arrays, Examples Using arrays, declaring an array and using a Loop to initialize the array's Elements, Initializing an array in a Declaration with an Initializer List.	4
...		
Total		

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		



Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1	Construct error free C++ programs.		
1.2	Divide a problem into its logical components.	Lectures. Lab demonstrations.	Written Exam Homework assignments
1.3	Design and code small to medium sized problems from the start using C/C++ constructs, such as input/output statements, if-then-else statements, while and for loops, functions.	Case studies. Individual presentations	Lab assignments Class Activities Quizzes
2.0	Skills		
2.1	Apply knowledge of computing and mathematics appropriate to the discipline.	Written Exam Homework assignments	Written Exam Homework assignments
2.2	Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs.	Lab assignments Class Activities Quizzes	Lab assignments Class Activities Quizzes
...			
3.0	Values		
3.1			
3.2			
...			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	First written mid-term exam	6	10%
2	Second written mid-term exam	12	10%
3	Presentation, class activities, and group discussion	Every week	10%
4	Homework assignments	After each chapter	10%
5	Implementation of presented algorithms	Every two weeks	10%
6	Electronic Quizzes	Every chapter	10%
7	Final written exam	16	40%
8	Total		100%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Deitel and Deitel, " C++: How To Program ", 2010, Prentice Hall, ISBN 978-007351725.
Essential References Materials	S. Malik, " C++ Programming: From Problem Analysis to Program Design ", Course Technology, ISBN 061916042X.
Electronic Materials	http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6.001-introduction-to-c-january-iap-2011/
Other Learning Materials	Video and presentation are available with me

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom and Lab available at College of science in Zulfi.
Technology Resources (AV, data show, Smart Board, software, etc.)	All resource are available in the halls
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students Reviewers	Questionnaires (course evaluation) filled by the students and electronically organized by the university. Student-faculty and management meetings.

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Quality of learning resources	Program Leaders	Direct/indirect

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

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

Assessment Methods (Direct, Indirect)



H. Specification Approval Data

Council / Committee	Dr Fayez AlFayez Dr. Theljeoui Adel
Reference No.	
Date	25-01-2021