هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	Programming II
Course Code:	**CS211**
Program:	**Computer Science**
Department:	**Computer Science**
College:	**Computer and Information Sciences**
Institution:	**Majmaah University**

Table of Contents

A. Course Identification

1. Credit hours: 4(3,2,0)
2. Course type **a.** University ☐ College ☑ Department ☐ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: Level 4
4. Pre-requisites for this course (if any)**:** **CS131 – Programming I**
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**	55	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	33
2	**Laboratory/Studio**	22
3	**Tutorial**	
4	**Others** (specify)	
	Total	55

B. Course Objectives and Learning Outcomes

1. Course Description

This course is an introductory course in object-oriented programming. The fundamental concepts of object-oriented programming will be studied using the C++ programming language.

2. Course Main Objective

The students are expected to be able to:

(a) Understand the basic OO programming concepts.
(b) Compare the OO programming approach against the traditional approach.
(c) Identify the main objects/classes, methods, attributes from given problem specifications.

(d) Design and code small to medium sized problems from the start using the appropriate OO concepts and other concepts introduced (class, inheritance, polymorphism, generic programming etc.)
(e) Create and manipulate Files using the available I/O file streams classes.
(f) Contribute to a group effort to realize an OOP based solution

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1		
1.2		
1.3		
1...		
2	**Skills :**	
2.1	Students will apply formulas and functions of mathematics.	S1
2.2	Students will analyze a programming problem in object-oriented domain and find computing requirements which will map to the given problem and its solution.	S1
2.3	Students will be able to analyze, design and implement a program using object-oriented programming tool and C++ programming language.	S2
2...		
3	**Values:**	
3.1	Students will perform programming and lab related activities in group	V1
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Overview of C++ basic concepts	5
2	Functions and an Introduction to Recursion	5
3	Arrays and Vectors	5
4	Pointers	5
5	Classes and Objects	10
6	Inheritance, Polymorphism, and Operator Overloading	10
7	Templates	5
8	File Processing	5
9	Review	5
Total		55

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**		
1.1			

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.2			
…			
2.0	**Skills**		
2.1	Students will apply formulas and functions of mathematics.	Classroom Teaching	Midterm Exam, Final Exam
2.2	Students will analyze a programming problem in object-oriented domain and find computing requirements which will map to the given problem and its solution.	Classroom Teaching	Midterm Exam, Final Exam
2.3	Students will be able to analyze, design and implement a program using object-oriented programming tool and C++ programming language.	Mini Project, Lab Exercises	Lab Based Assignments, Mini Project
3.0	**Values**		
3.1	Students will perform programming and lab related activities in group	Mini Project, Lab Exercises	Lab Project Evaluation
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Exam 1	5	15%
2	Exam 2	8	15%
3	Lab Assignments	11	15%
4	Project	11	15%
5	Final Exam	12	40%
6			
7			
8			

***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 :

Two office hours per week are dedicated to students.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	C++ How to Program H. M. Deitel, P.J.Deitel, Prentice Hall, 2016, 10th ed.
Essential References Materials	

Electronic Materials	
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom, lab, PCs
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, MS Visual Studio
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	Students	Indirect
Effectiveness of assessment	Instructor	Direct
Achievement of CLOs	Instructor	Direct

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	
Reference No.	
Date	