Identification	Department	Computer Science
	Program	Undergraduate
	Subject	CMS 140(Fundamentals of Computer Programming) 3 credits
	Term	Spring 2023
	Instructor	**Mohammad AL-Qudah**
	E-mail	Mohammad.ali@khazar.org
	Classroom/hours	11 Mehseti str. (Neftchilar campus)

Prerequisites	CMS 115 Computer Application in Engineering
Language	English
Compulsory/Elective	Compulsory

Text books and course materials	**Core Textbooks**: 1. Problem solving with C++ / Savitch, Walter J, 1943- Pearson/Addison-Wesley, Boston : TENTH EDITION Edition. **Supplementary Textbooks**: 1. C++ programming : From Problem Analysis to Program Design /C plus plus programming. : Malik, D S. Course Technology, Boston, MA : eighth Edition. 2. C++ common knowledge : essential intermediate programming/C++ (Computer program language) , Dewhurst, Stephen C. Addison-Wesley, Upper Saddle River, N. J 3. https://www.w3schools.com/

Teaching methods	Case analysis	
	Group discussion	+
	Lab	+
	Lecture	+
	Course paper	+

Evaluation Criteria	Others	
	Methods	**Percentage (%)**
	Midterm Exam	**30%**
	Case studies	
	Activity	**5%**
	Quizzes (4)	**15%**
	Project (1)	**10%**
	Presentation	
	Laboratory Work (Assignments)	
	Final Exam	**40%**
	Other	
	Total	**100%**
Course objectives	1. The basic programming and OOPs concepts 2. Creating C++ programs 3. Tokens, expressions, and control structures in C++ 4. Arranging the same data systematically with arrays 5. Classes and objects in C++ 6. Constructors and destructors in C++ 7. Files management and templates in C++ 8. Handling exceptions to control errors	
Learning outcomes	By successfully completing this course, students will beable to: 1. Describe OOPs concepts 2. Use functions and pointers in your C++ program 3. Understand tokens, expressions, and control structures 4. Explain arrays and strings and create programs using them 5. Describe and use constructors and destructors 6. Understand and employ file management 7. Demonstrate how to control errors with exception handling.	

Course outline	This course provides the student with the opportunity to learn the basics of programming and algorithm development using top-down design with the syntax and semantics of the C++ language. This course will introduce the essential ideas of C++ programming and the breadth of the discipline of computing. We will study the fundamentals of language in detail. This course will cover a few advanced features, which include structures and classes. No prior knowledge of C++ is required, but students are expected to have a good understanding of the computing environment and concepts.
Course policy	***Attendance*** *Attendance is very important for the course. In accordance with university policy, students missing more than 25% of total classes are subject to failure. Penalties may be assessed without regard to the student's performance. Attendance will be recorded at the beginning or end of each class.* ***Exams*** *All exams will be* *CLOSE-BOOK;* *necessary algorithms/equations/relations will be supplied as convenient.* ***Make ups:*** *Unless arrangements are worked out in advance, missed assignments **cannot** be made up, and 10% per week will be deducted for late submissions. Exams' makeup must go through the department and faculty approvals process.* ***Homework and Assignments:*** *Several Lab assignments will be assigned. Most assignments will be submitted electronically using the teams or email system.* **Homework and assignments must be submitted <u>before</u> their corresponding due date and time, as indicated in the assignment description.** *Late submissions will be assessed a 10% penalty per day. All Lab Assignments must be submitted before the start of the next lab week and will not be graded thereafter.*

In-Class Computers and Handheld Devices:

*Phone calls, text messages, instant messages, email, and general web surfing are **not allowed** during class time. Computers may only be used to follow the material in class. Violators will have their devices confiscated or asked to leave the room*

Cheating:

*In this course, **all** assignments, exams, and project submissions implicitly imply that it is the sole work of the author, unless joint work is explicitly authorized. Help may be obtained from the instructor or other students to understand the description of the problem and any technology, but the solution must be the student's own work. If joint work is authorized, all contributing students must be listed on the submission. Any deviation from this is considered a cheating attempt, and as a minimum, will result in failure of the submission and as a maximum reporting the incident to the department and the faculty to apply the University rules.*

		Tentative Schedule	
Week	Date/Day(tentative)	Topics	Textbook Assignments
1		**An overview of computers and programming languages** ✓ Categories of Computers ✓ Elements of computer system ✓ The language of a computer ✓ Programming with the problem Analysis coding-execution cycle (Theory: 90 minutes + Practice: 45minutes + Group discussion: 45 minutes)	Chapter 1 From Textbook
2		**Basic Elements of C++** ✓ The basic of C++ program ✓ Data Types ✓ Operators ✓ Expressions ✓ Input/Output ✓ Creating a C++ program ✓ Program style and form (Theory: 90 minutes + Practice: 90minutes)	Chapter 2 From Textbook
3		**Continue Basic Elements of C++** **1st quiz and First Assignment** Theory: 90 minutes + Practice: 45minutes + Quiz#01: 45 minutes)	Chapter 2 From Textbook
4		**Control Structure (Selection)** ✓ Relational and Logical operators ✓ if and if& ..else Statements ✓ Switch Structure (Theory: 90 minutes + Practice: 90minutes)	Chapter 4 From Textbook
5		**Continue Control Structure (Selection)** **2nd Quiz** Theory: 90 minutes + Practice: 45minutes + Quiz#02: 45 minutes)	Chapter 4 From Textbook
6		**Control Structure (Repetition)** ✓ While Looping ✓ For Looping ✓ Do& while Looping **Second Assignment**	Chapter 5 From Textbook

		(Theory: 90 minutes + Practice: 45minutes + Group discussion: 45 minutes)	
7		**>>Continue Structure (Repetition)** **Review midterm exam** (Theory: 90 minutes + Practice: 90minutes) **>>Start new topic User-Defined Functions 1**	Chapter 5 Chapter 6 From Textbook
8		**Midterm Exam**	
9		**Continue User-Defined Functions 1** ✓ Predefined Functions ✓ User-Defined Functions ✓ Value-Returning Functions. (Theory: 90 minutes + Practice: 90 minutes)	Chapter 6 From Textbook
10		**User-Defined Functions 2** ✓ Void Functions ✓ Value Parameters ✓ Reference variables as parameters ✓ Reference parameters and value-returning ✓ Functions Scope ✓ Variables (local, global) (Theory: 90 minutes + Practice: 90minutes) **Third Assignment**	Chapter 7 From Textbook
11		**Arrays and Strings** ✓ Arrays ✓ Character Arrays ✓ Parallel Arrays (Theory: 90 minutes + Practice: 45minutes + Group discussion: 45 minutes)	Chapter 9 From Textbook
12		**>>Continue Arrays and Strings** **Start new topic Namespaces** ✓ the class string ✓ User-Defined Simple Data Types **3rd Quiz** (Theory: 90 minutes + Practice: 45minutes + Quiz#03: 45 minutes)	Chapter 9 Chapter 8 From Textbook

13		**Introduction to Records (structs) and classes** (Theory: 90 minutes + Practice: 90minutes)	Chapter11 Chapter 12 From Textbook
14		**>>Continue Introduction to Records (structs) and classes** **4th Quiz** Theory: 90 minutes + Practice: 45minutes + Quiz#04: 45 minutes)	Chapter11 Chapter 12 From Textbook
15		**>>Continue introduction to Records (structs) and classes** (Theory: 45 minutes + Practice: 45 minutes + Project Presentation: 75minutes + Exam Preparation: 15 minutes)	Chapter 11 Chapter12 From Textbook
16		**Final Exam**	

This syllabus is a guide for the course and any modifications to it will be announced in advanc