		CMS 140 Fundamentals of Computer Programming 6 ECTS	
Identification	Subject		
	Department	Computer Science	
	Group	D	
	Program	Undergraduate	
	Term	Spring, 2024	
	Instructor	Hafiz Muhammad Azeem Akram	
	E-mail:	a.akram@khazar.org	
	Campus/Day	Neftchilar Campus	
	Cumpus Duy	Wednesday	
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Prerequisites	English proficiency		
Language	English		
Compulsory/Elective	Required		
Required textbooks and course materials	<ol> <li>Walter J. Savitch. Problem Solving with C++, 3rd Edition. ISBN-13: 9781292222820</li> <li>Paul Deitel , Harvey Deitel . C++ How to Program 10th Edition. ISBN: 9780134448237</li> </ol>		
Course Description and outline	<ul> <li>This comprehensive course is designed to provide students with a solid foundation in programming. Throughout this course, students will learn the fundamentals of programming. Starting with an overview of the importance of programming languages, the course progresses to cover topics such as data types and variables, control structures, functions, arrays, structures, and pointers.</li> <li>We will cover the following key topics: <ul> <li>Introduction to Programming.</li> <li>Data Types and Variables</li> <li>Control Structures</li> <li>Functions</li> <li>Arrays and Structures</li> </ul> </li> </ul>		
Course objectives	<ol> <li>To appreciate the need for a programming language</li> <li>To introduce the concept and usability of the structured programming methodology.</li> <li>To develop proficiency in making useful software using the C/C++ language</li> </ol>		
Learning outcomes	<ul> <li>Demonstrate</li> <li>Apply Key P</li> <li>Analyze and</li> <li>Design Struct</li> </ul>	Fundamental Programming Knowledge rogramming Constructs Solve Programming Problems tured Programs	

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	Lecture		X	
	Group discussion		X	
	Experiential exercise		Х	
Teaching methods	Labs		Х	
	Case analysis		Х	
	Course paper		X	
	Others			
	Methods	Date/deadlines	Percentage (%)	
	Midterm Exam		30	
	Final Exam		30	
	Quizzes		15	
	Assignments		15	
	Class Participation		10	
Evaluation	Total		100	
Policy	<ul> <li>The lecture material will focus on the major points introduced in the text. Reading the assigned chapters and having some familiarity with them before class will greatly assist your understanding of the lecture. After the lecture, you should study your notes and work relevant problems.</li> <li>Withdrawal (pass/fail)</li> </ul>			
	<ul> <li>Applied Science. Thus, astudent is normally expected to achieve a mark of at least 60% to pass. In case of failure, he/she will be required to repeat the course the following term or year.</li> <li>Cheating/plagiarism Cheating or other plagiarism during the Quizzes, Mid-term and Final Examinations will lead topaper cancellation. In this case, the student will automatically get zero (0), without any considerations.</li> <li>Professional behavior guidelines The students shall behave in the way to create favorable academic and professional environmentduring the class hours. Unauthorized discussions and unethical behavior are strictly prohibited.</li> <li>Ethics Students should not arrive late to class. All cell phones must be turned off and stowed away before entering class. Use of any electronic devices is not allowed in the classroom and violators will be punishedaccordingly.</li> <li>Quizzes At the end of every topic, a brief quiz of five minutes duration will be cardward. The final environment using the quiz using the datarmined by taking.</li> </ul>			
	<ul> <li><b>Assignments</b> <ul> <li>After completing er assignment that mu</li> </ul> </li> <li>Class Participation Failure to attend 1 attendance point.</li> </ul>	nd of the semester. very 25% of the syllabus, stud st be completed within one wo n 80 minutes of class will res	dents will receive an orking week. ult in a loss of one	

WK	Date/Day (tentative)	Topics	Recommended Readings
1	14/02/2024	<ul> <li>Introduction to Programming and Problem Solving</li> <li>Introduction to C++</li> <li>Testing and Debugging</li> <li>IDE</li> </ul>	Lecture Slides Readings:1.2-1.4
2	21/02/2024	<ul> <li>Variables and Assignments</li> <li>Input And Output</li> <li>Data Types and Expressions</li> <li>Program Style</li> </ul>	Lecture Slides Readings:2.1-2.14
3	28/02/2024	<ul> <li>Simple Flow of Control</li> <li>Using Boolean Expressions</li> <li>Multiway Branches: Multiway <i>if-else</i> Statements, The <i>switch</i> Statement</li> <li>Case Studies</li> </ul>	Lecture Slides Readings:3.1-3.2
4	06/03/2024	<ul> <li>Loop Statements</li> <li>Designing Loops</li> <li>Case Studies</li> </ul>	Lecture Slides Readings: 3.3-3.4
5	13/03/2024	<ul> <li>Top-Down Design</li> <li>Predefined Functions</li> <li>Programmer-Defined Functions</li> </ul>	Lecture Slides Readings:4.1-4.3
6	20/03/2024		No Working Day
7	27/03/2024	<ul> <li>Procedural Abstraction</li> <li>Scope And Local Variables</li> <li>Overloading Function Names</li> </ul>	Lecture Slides Readings:4.5-4.8
8	03/04/2024	Midterm Exam	
9	10/04/2024		No Working Day
10	17/04/2024	<ul> <li>Void Functions</li> <li>Call-By-Reference Parameters</li> <li>Using Procedural Abstraction</li> <li>Testing And Debugging Functions General Debugging Techniques</li> </ul>	Lecture Slides Readings:5.1-5.3
11	24/04/2024	<ul> <li>Introduction to Arrays</li> <li>Array Basics</li> <li>Passing Arrays to Functions Problems</li> </ul>	Lecture Slides Readings:7.1-7.2

12	01/05/2024	<ul> <li>Preventing Changes of Array Arguments in Functions</li> <li>Returning Arrays from Functions</li> <li>Searching Arrays Sorting Arrays</li> </ul>	Lecture Slides Readings:7.3-7.4	
13	08/05/2024	<ul> <li>Introduction to Multidimensional Arrays</li> <li>Declaring Two-Dimensional Arrays</li> <li>Processing Two-Dimensional Arrays</li> <li>Passing Two-Dimensional Arrays to Functions Introduction to Pointers</li> </ul>	Lecture Slides Readings:7.5-7.6	
14	15/05/2024	<ul> <li>POINTERS</li> <li>Memory Management</li> <li>Static Variables and Automatic Variables</li> </ul>	Lecture Slides Readings: 9.1-9.2	
15	22/05/2024	<ul> <li>DYNAMIC ARRAYS</li> <li>Array Variables and Pointer Variables</li> <li>Creating and Using Dynamic Arrays</li> </ul>	Lecture Slides Readings: 9.3-9.4	
	Final Exam			

Note: All the readings mentioned above are from the book Problem Solving with C++, 3rd Edition.

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