



## Course Syllabus

Faculty: Computing & Information Technology

Department: CS, IT, IS

Program: CS, IT, IS

I. General information about the course instructor :							
Name	Abdulrahman Al-Molegi	Office Hours(3 Hours Weekly )					
Location & phone number	Information System Department	Sat	Sun	Mon	Tue	Wed	Thu
Email	aqmolijy2@yahoo.com						√

II. General information about the course:					
1. Course Title :	Computer Programming				
2. Course Code and Number :	CIT06				
3. Credit Hours :	Credit Hours				Total
	Theoretical	Seminar/Tutorial	Practical	Training	
	2		1		
4. Study Level and Semester:	2 <sup>th</sup> year , 1 <sup>nd</sup> semester				
5. Pre-requisites (if any):	CIT05 - Problems Solving and Programming				
6. Co-requisites (if any):	-				
7. Program in which the course is offered:	CIT				
8. Teaching Language:	English				
9. Instruction location:					

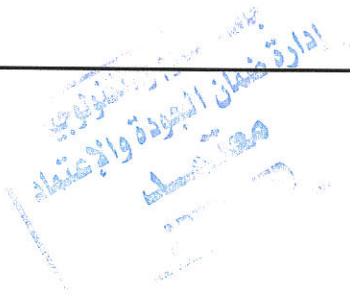
I. Course Description	
▪	This course will cover the rest of structure programming concepts and advance topics such as arrays, functions, pointers, strings, structures, files, and introduction to object oriented programming. According to the course plan, the prerequisite of this course is Problems Solving and Programming. To achieve the course goals, different teaching strategies will be applied such as direct, indirect and interactive and self-learning.

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## II. Course Aims:

This course aims to:

- 1- Learn students with the concept of arrays, pointers, strings and structures.
- 2- Expand student's knowledge with the concepts of methods, functions and recursions.
- 3- Learn students with the basics concepts of object oriented programming.
- 4- Train Students to consider various problems and solve it using C++ procedural programming language.
- 5- Train Students to read and write effectively technical reports related to the field of Computer Programming.

## III. Course Intended Learning Outcomes (CILOs) :

1. **a1-** Understand the concept of advance topics of computer programming.
2. **a2-** Recognize the various type of functions.
3. **b1-** Construct programs modularly from functions.
4. **b2-** Differentiate between terms related to programming concepts.
5. **b3-** Analyze several alternative solutions to determine the best approach.
6. **c1-** Develop problem solutions for the computer using various type of methods that lead to the best possible solution to a problem.
7. **c2-** Implement C++ programs to various problems.
8. **d1-** Write and present technical ideas and computer programming issues based on the acquired knowledge.

## IV. Course Contents

### Theoretical Aspect:

No.	Course Units	Sub-topics	Week due	Contact Hours
1	Array Concept	<ul style="list-style-type: none"><li>- Arrays.</li><li>- Declaring Arrays</li><li>- Examples Using Arrays</li><li>- One-Dimensional Arrays.</li><li>- Two-Dimensional Arrays.</li><li>- Multidimensional Arrays.</li></ul>	2	4
2	Functions	<ul style="list-style-type: none"><li>- Introduction</li><li>- Library Functions</li><li>- Function Definitions with Multiple Parameters</li><li>- Local and global variables</li><li>- Recursion</li></ul>	2	4
3	Pointers	<ul style="list-style-type: none"><li>- Introduction</li><li>- Pointer Variable Declarations and Initialization</li><li>- Pointer Operators</li><li>- Pass-by-Reference with Pointers</li><li>- Arrays of Pointers</li><li>- Function Pointers</li></ul>	2	4
4	Mid Term Exam		1	2
5	String manipulation	<ul style="list-style-type: none"><li>- Introduction</li><li>- string Assignment and Concatenation</li><li>- Comparing strings</li><li>- Substrings</li><li>- Swapping strings</li></ul>	2	4

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		- string Characteristics - Replacing Characters in a string - Inserting Characters into a string		
6	File Processing	- Introduction - Files and Streams - Creating a Sequential File - Reading Data from a Sequential File - Updating Sequential Files	2	4
7	Object-Oriented Programming: Inheritance	- Introduction - Base Classes and Derived Classes - protected Members - public, protected and private Inheritance	3	6
8	Revision		1	2
9	Final Term exam		1	2
<b>Total number of weeks and hours</b>			<b>16</b>	<b>32</b>

### Second: Practical/Tutorial/Clinical Aspects :

#### Write up practical/tutorial/clinical topics

No.	Practical/Tutorial/Clinical topics	No. of Weeks	Contact Hours
1.	Arrays	2	4
2.	Function definition in C++	1	2
3.	Building the Functions	2	4
4.	Pointers	2	4
5.	Strings	2	4
6.	Files	2	4
7.	Object-Oriented Programming	3	6
<b>Total number of weeks and hours</b>			

### V. Teaching Strategies

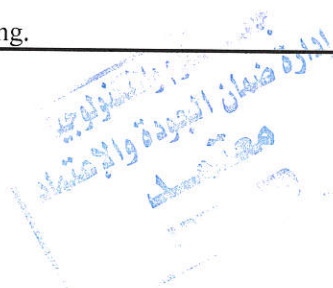
1. Lectures.
2. Problem solving.
3. Classroom Discussion.
4. Assignment.
5. Tutorial
6. Research and Self-learning.

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VI. Tasks and Assignments			
No.	Task/Assignment	Week due	Mark
1	Write C++ program that uses a one-dimensional array to store student grades on a single exam.	3	5
2	Write C++ program that uses a two-dimensional array grades to store the grades of a number of students on multiple exams.	6	5
3	Write a program that tests as many of the math library functions as you can. Exercise each of these functions by having your program print out tables of return values for a diversity of argument values.	9	5
4	For each of the following, write a single statement that performs the specified task. a) Declare the variable fPtr to be a pointer to an object of type double. b) Assign the address of variable number1 to pointer variable fPtr. c) Print the value of the object pointed to by fPtr. d) Assign the value of the object pointed to by fPtr to variable number2. e) Print the value of number2. f) Print the address of number1. g) Print the address stored in fPtr. Is the value printed the same as the address of number1?	12	5

VII. Learning Assessment:				
No.	Assessment Tasks	Assessment day & date	Mark	Weight
1	Homework/Tasks/Assignments	2	20	20%
2	Quiz 1	4	5	5%
3	Midterm Exam	7	20	20%
4	Quiz 2	10	5	5%
5	Final Exam	16	50	50%
<b>Total</b>				

VIII. Learning Resources
<b>1. Textbooks:</b> <ul style="list-style-type: none"> <li>C++ How to Program – 8<sup>th</sup> Edition by Deitel Deitel, Prentice Hall, ISBN 0-13-142644-3.</li> </ul>

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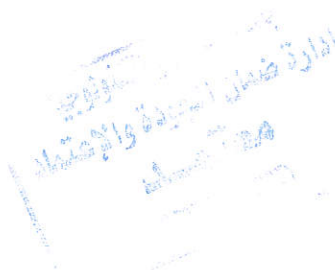
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<ul style="list-style-type: none"> <li>• Spranle, M., 2005, Problem Solving and Programming Concepts, 7th Edition, Prentice Hall, USA.</li> </ul>
<b>2. Essential References:</b> <ul style="list-style-type: none"> <li>• D.S. Malik, Thomson, 2007, C++ Programming: From Problem Analysis to Program Design, Third Edition, Course Technology.</li> <li>• Walter Savitch, Problem Solving with C++, 7th Edition, Addison Wesley.</li> </ul>
<b>3. Electronic Materials and Web Sites:</b> <ul style="list-style-type: none"> <li>• <a href="http://www.doc.ic.ac.uk/~wjk/C++intro">www.doc.ic.ac.uk/~wjk/C++intro</a></li> <li>• <a href="http://www.deakin.edu.au/~agoodman/Ctutorial.html">www.deakin.edu.au/~agoodman/Ctutorial.html</a></li> <li>• <a href="http://www.tldp.org/howto/c++programming.howto.html">www.tldp.org/howto/c++programming.howto.html</a></li> <li>• <a href="http://www.vb-bookmark.com/cpptutorial.html">www.vb-bookmark.com/cpptutorial.html</a></li> </ul>

IX. Course Policies (To be determined by Faculty Deanship)	
1.	<b>Class Attendance :</b>
2.	<b>Tardy :</b>
3.	<b>Exam Attendance/Punctuality:</b>
4.	<b>Assignments &amp; Projects:</b>
5.	<b>Cheating:</b>
6.	<b>Plagiarism:</b>
7.	<b>Other policies:</b>



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