AL-BALQA APPLIED UNIVERSITY
Prince Abdullah bin Ghazi Faculty
of Information Technology
Department of Computer Science

Course Syllabus

Course Name	**Computer Skills (2)**
Course Number	30801101
Semester	2016-2017 (summer)
Prerequisites	
Course Website	
Instructor(s)	Dr. Habes Alkhraisat
Instructor emails	h.alkhraisat@bau.edu.jo
Office Location	IT Building, 2nd Floor
Office Hours	12:30-14:00 Sun., Tue.

Course Description	Introduction to computers and algorithms as well as programming in a high-level language. Topics include variables, loops, expressions, functions, and string class. Students will learn the fundamentals of developing coherent, expressive programs.
Course Objectives	At the end of the semester student should: 1. Understand and use the basic programming constructs of C/C++ 2. Manipulate various C/C++ datatypes, such as arrays, strings, and pointers 3. Isolate and fix common errors in C++ programs 4. Solve problems using the C++ programming language
Textbook	D.S. MALIK, C++ PROGRAMMING: FROM PROBLEM ANALYSIS TO PROGRAM DESIGN, 6th edition, Course Technology;
References	Walter Savitch, Problem Solving with C++, 9th Edition, 2014.
Grading Policy	Midterm Exam 35% Date: Final Exam 50% Date: Lab Midterm Exam 10% Date: Lab final Exam 15% Date:
Teaching & Learning Methods	Reading from the textbook, Lecture notes, Home works
Course Outcomes	Design, compile and execute C++ programs to solve basic problems. 2. Describe the concept of a variable. 3.Describe and use C++ control structures. 4.Describe and use functions, parameters, and return values. 5. Perform file input and output. 6. Solve problems requiring the use of arrays.

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Course Contents		
Week	**Topics**	**Chapter in Text**
1	**Introduction to the C++ Language** 1. Computer System 2. The Programming Process 3. C++ Program Structure 4. Input/output Streams 5. Standard output (cout) and the Extraction Operator << 6. Standard input stream cin and the Extraction Operator >> 7. C++ Comments	**One**
2	**Variables and types** 1. Introduction 2. Identifiers 3. Fundamental data types a. Integer b. Float c. Double d. Char e. bool 4. Declaration of variables 5. Initialization of variables 6. Character and string literals 7. Constants variables 8. Preprocessor definitions (#define) 9. Type casting implicit and explicit	**2**
3	**Operators** 1. Assignment operator (=) 2. Arithmetic operators (+, -, *, /, %) 3. Compound assignment (+=, -=, *=, /=, %=, >>=, <<=, &=, ^=, |=) 4. Increment and decrement (++, --) 5. Relational and comparison operators (==, !=, >, <, >=, <=) 6. Logical operators (!, &&, ||) 7. Conditional ternary operator (?) 8. Precedence of operators	**3**
4	**Control Structure – Selection statements** **Introduction**	**4**

	1. if statement a. Syntax b. Flow Diagram c. Example 2. if...else statement a. Syntax b. Flow Diagram c. Example 3. nested if statements a. Syntax b. Flow Diagram c. Example 4. switch statement a. Syntax b. Flow Diagram c. Example	
5	**Control Structure – Loops statements** 1. for loop a. Syntax b. Flow Diagram c. Example 2. while loop a. Syntax b. Flow Diagram c. Example 3. do...while loop a. Syntax b. Flow Diagram c. Example 4. nested loops a. Syntax b. Flow Diagram c. Example 5. Loop Control Statements (Jump statements) a. break statement i. Syntax ii. Flow Diagram iii. Example b. continue statement i. Syntax ii. Flow Diagram iii. Example c. goto statement	5

	i. Syntax ii. Flow Diagram iii. Example	
6	**Arrays** **Introduction** 1. One Dimensional Array a. Declaring Arrays b. Initializing Arrays c. Accessing Array Elements 2. Multidimensional arrays a. Declaring 2D Arrays b. Initializing 2D Arrays c. Accessing 2D Array Elements	**9**
7	**C–Strings (Character Arrays)** 1. Reading and Writing Strings a. String Input b. String Output	**9**
8	**Function – User Defined** 1. Introduction 2. Syntax of Function 3. Function Declaration 4. Calling a Function 5. void Functions 6. The Type of Return Value 7. Default Arguments 8. Calling a Function by Value 9. Calling a Function by Reference 10. Function Overloading 11. Inline Functions 12. Variable storage types 13. Passing array to function	**6+7**
8	**Function – Predefined** 1. Math library 2. String library	