


Sub.	Course Description – توصيف مقرر دراسي	الموضوع	 كليات المعرفة ALMAAREFA COLLEGES
Date		التاريخ	

Course Code & No	COMP 220		رقم المقرر ورمزه
Course Name	Computer Programming for Engineers		اسم المقرر
Credit Hours	3(2+1+2)		عدد الساعات المعتمدة
Pre-requisite	MATH 101, MATH 102		المتطلب السابق

General Description	توصيف عام
<p>Introduction to computers and programming. Compilers and numbers systems. Program structures, comments, and printing. Formatting output, Escape sequence, and program debugging. Variables, arithmetic operators, and expressions. Access of input/output files. Program control using: if-else statement, switch commands, for loops, and while loops. User-defined functions. One and two dimensional Arrays. Multidimensional arrays. Strings and Pointers. Engineering Applications.</p>	

Course Objectives	أهداف المقرر
<p>By the end of the course, each student should be able to handle and solve simple C++ programming problems, perform assessments and make assumptions, evaluate and compare alternative programming codes and solutions of C++ programming problems such as fundamental principles of C++, the basics of program writing, programming style, basic declarations and expressions, arrays, qualifiers, and reading numbers, decision and control statements, programming process, advanced control statements, variable scope and functions, the C++ preprocessor, bit operations, advanced programming types, simple classes, simple pointers, file input/output, debugging and optimization, operator overloading, floating point, advanced pointers, advanced classes, exceptions, modular programming, templates, portability problems, special C++ programming features.</p>	

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Course Outlines	مفردات المقرر
<ul style="list-style-type: none"> • Introduction to C++, and the basics of program writing • Programming styles, basic declarations and expressions • Arrays, qualifiers, and reading numbers • Decision and control statements • Programming process • Advanced control statements, variable scope and functions • The C++ preprocessor, bit operations, and advanced programming types • Simple classes, simple pointers, and file input/output • Debugging and optimization • Operator overloading, and floating point • Advanced pointers, advanced classes, and exceptions • Modular programming, templates, and portability problems • Special C++programming features 	

References	المراجع
<p>Required Textbooks “Practical C++ Programming”, by S. Oualline, O'Reilly & Associates, Inc. (latest available edition).</p> <p>Essential References Materials “Introduction to Computers and Programming using C++”, by A.F. Bielajew, AFB (latest available edition).</p>	