Jadara University

Faculty: Science and Information Technology

Department: Computer Science

(Course Syllabus)

Course Title	Credit Hours	Course No.	Prerequisite	Year (semester)	Lec./Lab. Credit
Programming languge 1 (C++)	3	852121		2013 – 2014 Second Semester	Lecture: 3 Lab : 0

Coordinator Name	Lecturer	Room No.	E-mail	Office Hours
Mohammad Omar Al-issa	Mohammad Omar Al-issa	302	Mohammadal-issa@jadara.edu.jo	11-12 [Sun,Tue,Thur]

Course Objectives:

- to construct and develop elegant and efficient coded programs in C++,
- to learn the structure of a C++ program
- to understand each of C++ Program Control Statements,
- to discover and explore the power of functions.
- to test and debug a C++ program,
- to understand the basic principle of structured algorithm design techniques.

Course Description:

This course provides an introduction to problem-solving and programming using the language C++. The process of programming is much more than just writing code. It involves analyzing the problem at hand, designing a solution, implementing and testing that solution. In this course, students will learn to apply techniques for effective problem-solving and develop technical skills with C++ as an implementation language.

Intended Learning Outcomes :

Successful completion of this course should lead to the following learning outcomes:

A- Knowledge and Understanding:

A1) Understand the development of algorithms and problem solving.
A2) Choosing the appropriate data types.
A3) Select the best control structures to solve the problem.
A4) Using a software development environment.
A5) Writing codes and error detection and correction.

B- Intellectual Skills:

- Manipulating data in arrays and use their applications
- Understanding of the basic components of an object-oriented program including methods and attributes
- The distinction between classes and instances
- Apply the design process using basic object-oriented design notation

C) Subject Specific Skills:

C1) Implement the developed algorithms into a running program.
C2) Learn a good styles and a software engineering approach in writing programs.

D) Transferable Skills:

D1) Work in a project in order to get skills and experience.
D2) Doing home works and exercises to obtain the needed knowledge.

E- Projects and Assignments

During the course students are asked to achieve real implementation of the compilation phases for a certain language or subset of a language which should be discussed and approved by the lecturer.

Course Content

Week	Topics	Chapter No
1,2	**Arrays** Declaring and Processing One-Dimensional Arrays , Array Initialization Arrays as Parameters to functions , Searching and sorting arrays Declaring and Processing Two Dimensional Arrays Passing Two-Dimensional Arrays as Parameters to Functions **Programming Examples.**	Chapter 9
3&4	**Functions** Review of functions , Predefined functions , Void functions User-defined functions ,Passing by value , passing by reference Scope of variables , **Programming Examples**	Chapter 6 Chapter 7
5, 6 & 7 **Quiz (1)** **First Exam**	**Classes and Data Abstraction (ADT)** Introduction to Classes and Objects Classes, Objects, Member Functions and Data Members Defining a Class with a Member Function Defining a Member Function with a Parameter,**Programming Examples.**	Chapter 12
8, 9 &10	**Constructor and Destructors** (Initializing class object: Constructors,Defining default & initial constructors Using default argument with constructor) Providing default parameter value The constructor initialization list The copy constructor Using Destructors When constructor and destructors are called) **Programming Examples.**	Chapter 12
11	**Introduction to Constant Members** (const (Constant) Objects and const Member Functions static data members) **Programming Examples.**	Chapter 12
12 **Second Exam**	**Static and friend functions** (static Class Members Introduction to friend function) **Programming Examples.**	Chapter 10
13, 14 & 15	**Inheritance** (Introduction to inheritance (type of inheritance) Base Classes and Derived Classes ,protected Members Relationship between Base Classes and Derived Classes, Public in Inheritance Constructors and Destructors in Derived Classes)) **Programming Examples.**	Chapter 13
16	**Final Exam**	

Course quality improvement :

- From the market and new subjects in the field.
- From the monitoring of students feedback (Evaluation sheet).

Grade Distribution :

Assessment	Grade	Date
- First Exam	20%	
- Second Exam	20%	
- Assignments (Reports /Quizzes/ Seminar / Tutorials ….)	10%	
- Final Examination	50%	

- No Makeup exams are given under any condition. On time attendance of classes is required.

Reading List:

Text Book	C++ Programming: From Problem Analysis to Program Design D.S. Malik.5th ed.
Other References	C++ How to Program, Deitel and Deitel, Prentice Hall, 2010, 7th Ed.

Last updated on 1/3/2014 by: **Mohammad Omar Al-issa**