

QFO-AP-FI-MO02	اسم النموذج: Course Syllabus	جامعة فيلادلفيا
رقم الاصدار : 1 (Revision)	الجهة المصدرة: كلية تكنولوجيا المعلومات	
التاريخ: 2017/11/05	الجهة المدققة: عمادة التطوير والجودة	Philadelphia University
عدد صفحات النموذج:		

Course Title: C++ Programming Language (for students of Science Faculty)	Course code: 0750115 , Section :
Course Level:1	Course prerequisite (s) and/or corequisite (s):none
Lecture Time:	Credit hours:3h

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address

Course module description:

The module focuses on problem solving strategies and the use of algorithmic language to describe such problem solving. It introduces the principles of procedural programming, data types, control structures, functions, data representation on the machine level, problems that might be solved, and the use of c++ programming language.

Course module objectives:

This module aims to introduce the principles of Top Down problem solving strategy (divide and conquer), algorithm design, and imperative programming mainly at an abstract level. Topics include data definition structures, control structures, and primitive data structures. C++ programming language (in visual environment) is adopted as a vehicle language for implementations.

Course/ module components

- **Books (title , author (s), publisher, year of publication)**
P. Deitel & H. Deitel, C++ **How to program**, Pearson Education Limited, 2013.
- **Support material (s) :** Introduction to C++ slides

Teaching methods: lectures, tutorials, and practical works

Duration: 16 weeks in first semester, 48 hours in total

Lectures: 32 hours (2 hours per week),

Tutorials: 16 hours, 1 per week,

Laboratories: 16 hours, 1 per week,

Learning outcomes

A- Knowledge and understanding

A2. Know & understand a wide range of principles and tools available to the software developer, such as design methodologies, choice of algorithm, language, software libraries and user interface technique:

A4. Know & understand a wide range of software and hardware used in development of computer systems

A5. Know & understand the professional and ethical responsibilities of the practising computer professional including understanding the need for quality, security, and computer ethics.

B- Intellectual skills (thinking and analysis).

B1. Analyze a wide range of problems and provide solutions through suitable algorithms, structures, diagrams, and other appropriate methods

B4. Practice self learning by using the e-courses

C- Practical skills

C3. Work effectively with and for others.

C4. Strike the balance between self-reliance and seeking help when necessary in new situations

C5. Display personal responsibility by working to multiple deadlines in complex activities

D- Transferable Skills

D2. Prepare and deliver coherent and structured verbal and written technical reports.

D4. Use the scientific literature effectively and make discriminating use of Web resources

D5. Design, write, and debug computer programs in appropriate languages

Learning outcomes achievement

- Development: A2, A4, and A5 are developed through the lectures and laboratory sessions.

B1, D5, C3, and C4 are developed through Tutorials and Lab sessions,

B4, D2, D4, D5, and C5 are developed through Homework

- Assessment : A2, A4, A5, B1, D5, and C4 and are assessed through Quizzes, written exams, and Practical Works Exams.
B4, D2, D4, D5, and C5 are assessed through Homework Exam.

Assessment instruments

- Quizzes.
- Home works: practical project
- First, Second, and Final Exams.

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20
Second examination	20
Final examination: 50 marks	40
projects, Quizzes, and Home works	20
Total	100

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	Problem Solving, Problem Solving Methodology: Analysis, Design (Algorithm), Flowchart	
(2)	Algorithm Testing, Maintenance	Tutorial
(3+4)	C++ language environment (program structure, compile, execute, debug) Input and output statements Assignment statement Assignment operations Precedence rules Data definition statements	Tutorial
(5+6)	Program control statements: Simple selection statement (if ...else) Multiple selection statement switch case Program repetition statements: for repetition statement	Tutorial, Assignment #1
(7) First examination	Program repetition statements: while repetition statement do while repetition statement	Tutorial, Assignment #2
(8)	One and two dimensional Arrays	Tutorial
(9)	File (use of main operations of a sequential file: open, reset, rewrite, read, write, eof) Abstract data type (Struct Definition statement)	Tutorial, Assignment #3
(10)	Pointers	Tutorial
(11+12) Second examination	Function (Parameters definition and passing)	Tutorial
(13)	String: (use of main operations: read , write, string length, concatenate, compare)	Tutorial, Assignment #4
(14+15) Specimen examination	Comprehensive assignment covers all mentioned topics	
(16) Final Examination	Review and final Exam	

Expected workload: On average students need to spend 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

1. D.S. Malik , Thomson, C++ Programming: From Problem Analysis to Program Design, Sixth Edition, Course Technology, 2012.
2. Friedman Frank and Koffman Elliot B., "*Problem Solving, Abstraction and Design using C++*", Pearson Education , 2011.