

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
Ministry of Higher Education		وزارة التعليم العالي
Syrian Virtual University		الجامعة الافتراضية السورية

Course Definition:

1- Basic Information:

Course Name	Computer Programming 2
Course ID	CP2
Contact Hours (Registered Sessions)	15 hours
Contact Hours (Synchronized Sessions)	21 hours
Mid Term Exam	
Exam	75 min
Registered Sessions Work Load	15 hours
Synchronized Session Work Load	24 hours
Credit Hours	4

2- Pre-Requisites:

Course	ID
Computer Programming 1	CP1

3- Course General Objectives:

Understand object oriented programming and advanced C++ concepts:

- Be able to explain the difference between object oriented programming and procedural programming.
- Be able to program using more advanced C++ features such as composition of objects, operator overloads, dynamic memory allocation, file I/O, etc.
- Be able to build C++ classes using appropriate encapsulation and design principles

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4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes
ILO1	Know and understand the principles of procedural programming , Writing C ++ programs using control structures, arrays, and definition of dependencies
ILO2	Know and understand the basic components of an object-oriented programming design, build and design classes in C++ with the use of overloading of dependencies and effects and how to use this design to define objects within the program
ILO3	Understand the Pointers: Address and Pointers – The Address of Operator - Pointers and Arrays – Memory Management – Friend Functions .
ILO4	Understand the Files I/O (text files), build C ++ programs that can read data from files or write results to store, retrieve, and modify long-term data
ILO5	Know the advanced concepts such as Linked Lists that integrate the concept of pointers and the concept of classes

5- Course Syllabus (18 hours of total synchronized sessions)

- **RS:** Recorded Sessions; **SS:** Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1	<p>C ++ language</p> <ul style="list-style-type: none"> • How to write a standard C ++ program • Five basic instructions (input – output • Comments - Variables and types – Constants <p>Functions in C ++ and arrays</p> <ul style="list-style-type: none"> • Function Definition, function parameters, passing by value, 	4.5	6	assignments	Exercises

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	passing by reference <ul style="list-style-type: none"> • Vectors and multidimensional arrays • Strings ... 				
ILO2	Introduction in OOP Classes and Objects <ul style="list-style-type: none"> • understand the difference between object oriented programming and procedural programming • build C++ classes using appropriate encapsulation and design principles • using more advanced C++ features such as composition of objects, operator overloads, dynamic memory allocation, etc 	4.5	7.5	assignments	Exercises
ILO3	Pointers and dynamic management of memory <ul style="list-style-type: none"> • Pointers: Declaring - Assigning values to pointers - Access to data using pointers • Arrays and pointers • Pointers and classes • Dynamic memory 	1.5	1.5	assignments	Exercises
ILO4	C ++ language <ul style="list-style-type: none"> • Channels - channels and external files 	1.5	1.5	assignments	Exercises
ILO5	Building advanced data structures using classes and pointers <ul style="list-style-type: none"> • Linked Lists 		3		Exercises
ILO6	•				

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ILO7	•				
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6- Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration	Ex	Exams	Rpt	Reports & HW
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Work		

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1	Know and understand the principles of procedural programming		✓	✓	✓		✓
ILO2	Know and understand the basics of object-oriented design		✓	✓	✓		✓
ILO3	Understand the Pointers		✓	✓	✓		✓
ILO4	Understand the Files I/O		✓	✓	✓		✓
ILO5	Know the advanced concepts		✓	✓	✓		
ILO6			✓	✓	✓		✓
ILO7			✓	✓	✓		✓

7- Practice Tools:

Tool Name	Description
Visual Studio C++	A compiler in C++

8- Main References

Files pdf in moodle

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9- Additional References

C++, How to Program – by H. M. Deitel, Prentice Hall

Programmation cours et exercices – Guy Chaty / Jean Vicard – Edition Ellipses–

Marketing

Computing concepts with C++ essentials – Cay Horstmann – John wiley & Ullman

– 1999

<http://www.cplusplus.com/doc/tutorial/>

<http://www.learncpp.com/>

<http://www.tutorialspoint.com/cplusplus/>

<http://www.deitel.com/Books/C/CHowtoProgram9e/tabid/3644/Default.aspx>