Course Specification

1- Course basic information :		
Course Code: CSE 024 **Department requirement**	**Course Title:** Computer Languages	**Academic year:** 2015/2016 **Level (0) – Semester : 2nd**
Computer Applications and ICT	**Teaching hours: Lecture [2] Tutorial [0] Lab [2]**	

2- Course Objectives	1. To acquaint students with the role and uses of computer with respect to programming languages. 2. Introduce students to the concept of computer programming and different types of computer languages. 3. To present the basics of C++ programming language. 4. To introduce students to the basic elements of any object oriented programming.

3- Intended Learning Outcomes: ARS		**Course ILOs**
A- Knowledge and Understanding:	A.2. Outline basics of information and communication technology (ICT).	A2.1 Outline Computer programming and different types of computer languages. A2.2 Outline basics of C++ program structure. A2.3 Outline basics of C++ variables, data types and constants, standard data types. A2.4 Outline basics of C++ arithmetic expressions and operations. A2.5 Outline basics of C++ input/output statements. A2.6 Outline basics of C++ flow control statements. A2.7 Outline basics of C++ iterative statements. A2.8 Outline basics of C++ the compound data types including structure, arrays and pointers. A2.9 Outline basics of C++ functions including passing parameters and function overloaded, macros and recursion. A2.10 Outline basic elements of any object oriented programming.
	A.10. Outline technical language and report writing	A.10.1. Outline technical C++ language including structure, variables, statements, compound data, Macros and recursion.
B- Intellectual Skills	B.8. Select and appraise appropriate ICT tools to a variety of engineering problems.	B.8.1 Select and appraise C++ language to a variety of programming engineering problems.

C- Prof. Skills	C.1. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems.	C.1.1 Apply knowledge of C++ language to write computer programs for solving engineering problems.
D- General Skills	D.1. Collaborate effectively within multidisciplinary team. D.3. Communicate effectively. D.4. Demonstrate efficient IT capabilities. D.6. Effectively manages tasks, time, and resources.	D1.1 Collaborate effectively within multidisciplinary team during Lab to understand the basics of programming. D3.1Communicate effectively with colleagues in labs. D4.1 Demonstrate efficient C++ programming languages. D6.1 Effectively manages tasks to achieve the client requirements by using the programming language.

4-(a) Course Contents	The course acquaints the students with the role and uses of computer with respect to programming languages. It first introduces the students to the concept of computer programming and different types of computer languages. It then presents the basics of C++ programming language including: C++ program structure, variables, data types and constants, standard data types, arithmetic expressions and operations. Next, it introduces the C++ statements including: input/output statements, flow control statements (if statement, if else statement, nested if and switch case statement), iterative statements (for loop, while loop and do while loop). It also introduces the compound data types including: structure, arrays and pointers. Follow, it presents the functions including passing parameters and function overloaded, macros and recursion. Finally, the course introduces the basic elements of any object oriented programming language: classes and objects.
4-(b)Practical Laboratory	- Open C++ compiler and writing a program - Application programs on variable declaration, input and output statements - Application programs on conditional statements - Application programs on iterative statements - Application programs on functions, passing parameters to functions.
5- Teaching and Learning Methods	- Lectures - Labs - Research assignments
6- Teaching and Learning Methods for disable students	1-Assign a portion of the office hours for those students. 2- Give them specific tasks and evaluate them in it. 3- Repeat the explanation of some of the course material and tutorials. 4- Assign a teaching assistance to follow up the performance of this group of students.
7- Student Assessment	
a- Assessment Methods	- Weekly sheet exercises at class room - Quizzes

	- Labs. - Mid-term, and final exams
b- Assessment Schedule	- Exercise sheet/ Lab assignment: Weekly - Quizz-1: Week no 3 - Mid-Term exam: Week no 8 - Quizz-2: Week no 11 - Lab exam: Week no 15 - Final – term examination: Week no 16
c- Weighting of Assessment	- Class tutorial and quizzes: 10 % - Mid-term examination: 10 % -Oral and Lab/practical exam: 20 % - Final – term examination: 60 % Total 100 %
8- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book.
b- Text books	[1] Thomas Floyd, "Digital fundamental", 11th edition Prentice-Hall, Inc., July 24, 2014**.**
c- Recommended books	Thomas Floyd, "Digital fundamental", 10th edition Prentice-Hall, Inc., March 29, 2008**.** Brian W. Kernighan, and Dennis M. Ritchie , "The C Programming Language", 2nd edition ,1988
d- Periodicals, Web sites …etc	http://www.tutorialspoint.com/computer_fundamentals/ https://www.coursera.org/course/programming1 http://www.cprogramming.com/

Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Computer programming and different types of computer languages.	1	A2.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
C++ program structure.	2	A2.2, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
Variables, data types and constants, standard data types.	3	A2.3, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
Arithmetic expressions and operations.	4	A2.4, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
C++ statements including: input/output statements	5	A2.5, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
Flow control statements (if statement, if else statement, nested if and switch ….)	6 -7	A2.6, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
Iterative statements (for loop, while loop and do while loop)	9	A2.7, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
Compound data types	10-	A2.8, A10.1	B.8.1	C1.1	D1.1, D3.1,

including: structure, arrays and pointers	11				D4.1, D6.1
Functions including passing parameters and function overloaded, and Macros and recursion	12-13	A2.9, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1
Basic elements of any object oriented programming language: classes and objects	14-15	A2.10, A10.1	B.8.1	C1.1	D1.1, D3.1, D4.1, D6.1

Teaching and Learning Methods - ILOs Matrix

Teaching and Learning Methods	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Lectures	A2,A10	B.8	C1.1	D3.1, D4.1,
Labs	A2,A10	B.8	C1.1	D1.1, D3.1, D4.1, D6.1
Research assignments	A2,A10	B.8	C1.1	D4.1, D6.1

Assessment Methods - ILOs Matrix

Assessment Methods	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Weekly lab. exercises	A2,A10	B.8	C1.1	D4.1, D6.1
Labs / Lab exam	A2,A10	B.8	C1.1	D1.1, D3.1, D4.1, D6.1
Quizzes	A2,A10	B.8	C1.1	D4.1, D6.1
Midterm and Final exams	A2,A10	B.8	C1.1	D4.1, D6.1

Authorized from department board at 15/05/2016
Authorized from college board at 05/06/2016

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