Course Specifications (2011 - 2012)

A. Basic Information

Course Title	Computer Applications (2)				Course Code:	CVE 223	
Lecture:	2	Tutorial:	2	Practical		Total	4
Programme (s) on which this course is given:				B.Sc. Civil Engineering (General)			
Major or minor element of program:			Minor				
Department offering the program:			Civil Engineering				
Department offering the course:			Electrical Engineering				
Academic Year of program:	Second			Level of program:		Second Semester	
Date of specifications approval:				16/3/2010			

B. Professional Information

1. Overall aims of course

By the end of the course the students will be able to:

· Have a clear overview of how to solve engineering _ problems.
· Be able to give a computer solution to engineering problems.
· Be able to Share ideas and work in a team in an effective manner.

2. Intended Learning outcomes of Course (ILOs)

a. Knowledge and Understanding:

a.1) Recognize concepts and theories of mathematics and sciences, appropriate to the discipline.
a.2) Recognize basics of information and communication technology (ICT).
a.5) Recognize methodologies of solving engineering problems, data collection interpretation.

b. Intellectual Skills

b.1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems.

b.2) Select appropriate solutions for engineering problems based on analytical thinking.
b.3) Think in a creative and innovative way in problem solving and design.
b.4) Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.
b.11) Analyze results of numerical models and appreciate their limitations.

c. Professional and Practical Skills

c.1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to
c.2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, product and/or services.
c.7) Apply numerical modeling methods to engineering problems.

d. General and Transferable Skills

d.1) Collaborate effectively within multidisciplinary team.
d.6) Effectively manage tasks, time, and resources.

3. Contents

Week #	Topics	No. of Hours	ILOS	Teaching / learning methods and	Assessment method
1	S/W development method (algorithm)-Overview -Basic Structures of C++ programs	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam

2	Variables- Assignment statements, - input output, preprocessor directives, Operator, precedence, Comments	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
3	Control Structure, The if statement, the if-else statement, the if-else-if statement,	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
4	the else-if construct, the switch statement, the conditional operator	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
5	Repeation The for loop, the while loop, the do while loop, ending a loop,	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
6	continue and break statements	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
7	Top-Down design, Simple functions, function reptotype, functions that return a value,	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
8	Midterm Exam		a1,a2,a5		
			b1,b2,b3,b4,b11		
			c1,c2,c7		
			d1,d2		
9	Passing data to a function by value and by address, external and static variables	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
			a1,a2,a5	Lectures	Assignments

10	Arrays definition Repgramming with Arrays,	2	b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
11	Multidimensional Arrays, Strings	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
12	Pointer Overview Declaration, Returning data from functions,	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
13	Pointers and arrays, Pointers and strings	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
14	Defining classes and member functions Public and Private class, repperties of classes	2	a1,a2,a5	Lectures	Assignments
			b1,b2,b3,b4,b11	Class activity	Quiz
			c1,c2,c7	Case study	Report
			d1,d2	Tutorial	Final exam
15	Final Exam		a1,a2,a5		
			b1,b2,b3,b4,b11		
			c1,c2,c7		
			d1,d2		
Total		**26**			

4- Teaching and Learning Methods:

Check using the symbol √

√	Lectures
√	Practical training / laboratory
	Seminar / workshop
√	Class activity
	Case study
	Project work
√	Tutorial

	Computer based work
	Other :

5- Student Assessment Methods:

Check using the symbol √

√	Assignments	to assess	a1,a2,a5	b1,b2,b3,b4,b11	c1	d1,d2
√	Quiz	to assess	a1,a2,a5	b1,b2,b3,b4,b11	c1	d1,d2
√	Mid-term exam	to assess	a1,a2,a6	b1,b2,b3,b4,b12	c2	d1,d3
	Oral exam	to assess				
√	Final exam	to assess	a1,a2,a5	b1,b2,b3,b4,b11	c1,c2,c7	d1,d2
	Design Project	to assess				
√	Report	to assess	a1,a2,a5	b1,b2,b3,b4,b11	c1	d1,d2
	Experimental write up	to assess				
	Informally assessment	to assess				
	Other	to assess				

6. Assessment schedule

Assessment 1 Assignments on weeks	3,6,9,11
Assessment 2 Quizzes on weeks	4,7
Assessment 3 Mid-term exam on week	8
Assessment 4 Oral Exam on week	
Assessment 5 Final exam on week	15
Assessment 6 Design Project on weeks	
Assessment 7 Report on weeks	3,7,10
Assessment 8 Experimental write up on weeks	
Assessment 9 Informally assessment	

7. Weighting of Assessments

Assignments	10%
Quiz	10%
Mid-term exam	10%
Oral exam	
Final exam	60%
Design Project	
Report	10%
Experimental write up	
Informally assessment	
Other	

Total	100%

8. List of References

8.1 Course Notes

Computer Science : A structural approach using C++

8.2 Essential Books (Text Books)

• John C. Molluzzo , C++ for Business Programming, Second Edition, Prentice

8.3 Recommended Books

Roberrt Lafore, Object oriented programming in C++, 4th edition, SAMS, 2002

8.4 Periodicals Web sites, etc

9. Facilities Required for Teaching and learning

Presentation board, computer and data show

Course Coordinator:	Dr. Mazen Mohamed Selim	
Course instructor:	Dr. Mazen Mohamed Selim	
Head of department:	Prof. Ahmed AdbulFattah Mahmoud Ahmed	

Signature:

	D	M	Y
Date:			