Course Specifications (2011 - 2012)

A. Basic Information

Course Title	Graduation project - Reinforced Concrete structures				Course Code:	CVS 424	a	
Lecture:	0	Tutorial:	10	Practical	0	Total	10	
Programme (s) on which this course is given:				B.Sc. Civil Engineering (Structures)				
Major or minor element of program:				Major				
Department offering the program:				Civil Engineering				
Department offering the course:				Civil Engineering				
Academic Year of program:	Fourth			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:

• Perform complete analysis and design of different reinforced concrete buildings to satisfy national building code with the aid of computer software. Produce complete professional construction drawings and calculation sheet.

2. Intended Learning outcomes of Course (ILOs)

a. Knowledge and Understanding:

a.4) Understand principles of design including elements design, process and/or a system related to specific disciplines.
a.6) define quality assurance systems, codes of practice and standards, health and safety requirements and environmental
a.12) Recognize contemporary engineering topics.
a.13) Apply Engineering principles in the fields of reinforced concrete and metallic structures analysis and design, geo-
a.14) Understand Properties, behavior and fabrication of building materials.

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.5) Assess and evaluate the characteristics and performance of components, systems and processes.
b.9) Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact.
b.12) Create systematic and methodic approaches when dealing with new and advancing technology.
b.13) Select appropriate building materials from the perspective of strength, durability, suitability of use to location, temperature,
b.15) Analyze and select codes of practices in designing reinforced concrete and metallic structures of all types. Determine the
b.17) Assess and evaluate different techniques and strategies for solving engineering problems.

c. Professional and Practical Skills

c.2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, product and/or services.
c.3) Create and/or re-design a process, component or system, and carry out specialized engineering designs.
c.4) Practice the neatness and aesthetics in design and approach.
c.6) Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and
c.15) Practice professionally construction management skills. Prepare technical draft and detailed drawings both manually and

c.17) Prepare quantity surveying reports.

d. General and Transferable Skills

d.1) Collaborate effectively within multidisciplinary team.
d.2) Work in stressful environment and within constraints.
d.3) Communicate effectively.
d.4) Demonstrate efficient IT capabilities.
d.6) Effectively manage tasks, time, and resources.
d.7) Search for information and engage in life-long self learning discipline.
d.8) Acquire entrepreneurial skills.
d.9) Refer to relevant literatures.

3. Contents

Week #	Topics	No. of Hours	ILOS	Teaching / learning methods and strategies	Assessment method
1	Assigning structure and requirements, definition of design criteria	10	a4, a6	Tutorial	Informally assessment (Lecture
			b1	Tutorial	Informally assessment
			c2	Class activity	Informally assessment
			d1, d7	Class activity	Informally assessment
2	Layout & selection of structural system	10	a4, a6, a12, a13, a14	Tutorial	Informally assessment
			b1, b5	Tutorial	Informally assessment (Lecture
			c2	Class activity	Design Project
			d1, d7	Class activity	Design Project
3	Design assumptions, codes, loading cases Load calculations	10	a4, a6, a13, a14	Tutorial	Design Project
			b1, b7, b10, b15	Tutorial	Design Project
			c2	Class activity	Design Project
			d7,d9	Class activity	Design Project
4	Preparation of computer model for solution	10	a4, a13, a14	Tutorial	Design Project
			b1, b2, b3,b5	Tutorial	Design Project
			c2,c6	Class activity	Design Project
			d1, d4, d6	Class activity	Design Project
5	Structural analysis and calculation of straining actions for different studied cases.	10	a4, a13	Tutorial	Design Project
			b1,b2, b3	Tutorial	Design Project
			c2,c3,c4, c6	Class activity	Design Project
			d1, d4, d7	Class activity	Design Project
6	Design calculations of structural elements	10	a4, a6, a13, a14	Tutorial	Design Project
			b2, b5, b9, b12, b13	Class activity	Design Project
			c2,c3,c4, c6	Class activity	Design Project

			d2, d4, d6	Class activity	Design Project
7	Structural study and optimization of design	10	a4, a6, a13, a14	Tutorial	Design Project
			b2, b5, b9, b12, b13	Class activity	Design Project
			c3,c4,c6, c15	Class activity	Design Project
			d1, d2, d4, d6	Class activity	Design Project
8	Prepare detailed structural drawings & calculation sheet	10	a13	Tutorial	Design Project
			b15,b17	Class activity	Design Project
			c4,c6, c15	Class activity	Design Project
			d2, d3, d4, d8	Class activity	Design Project
9	Review drawings with instructors	10	a13	Class activity	Design Project
			b15,b17	Class activity	Design Project
			c4,c6, c15	Class activity	Design Project
			d2, d3, d4, d8	Class activity	Design Project
10	Review drawings with instructors	10	a13	Class activity	Design Project
			b15	Class activity	Design Project
			c4,c6, c15	Class activity	Design Project
			d2, d3, d4, d8	Class activity	Design Project
11	Final Oral Exam		a4,a6,a13,a14		Oral exam
			b5,b9,b15,b17		Oral exam
			c2,c15		Oral exam
			d3, d8		Oral exam
Total		**100**			

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				
	Quiz	to assess				
	Mid-term exam	to assess				
√	Oral exam	to assess	a4,a6,a13,a14	b5,b9,b15,b17	c2,c15	d3, d8
	Final exam	to assess				
√	Design Project	to assess	a4,a6,a12,a13,a14	b1,b2,b3,b5,b9,b12,b13,b15,b17	c2,c3, c4,c6,c15,c17	d1,d2,d3,d4,d6,d7, d8,d9
	Report	to assess				
	Experimental write up	to assess				

√	Informally assessment	to assess	a4, a13,a14	b1, b2, b5, b15	c3, c4, c6	d1,d2,d4,d6
	Other	to assess				

6. Assessment schedule

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

7. Weighting of Assessments

Assignments	
Quiz	
Mid-term exam	
Oral exam	40%
Final exam	
Design Project	40%
Report	
Experimental write up	
Informally assessment	20%
Other	
Total	100%

8. List of References

8.1 Course Notes

8.2 Essential Books (Text Books)

Egyptian Code for Loads on Structures
Egyptian Code for Design and Construction of Reinforced Concrete Structures
Uniform Building Code for loads on structures

8.3 Recommended Books

8.4 Periodicals Web sites, etc

9. Facilities Required for Teaching and learning

Lecture room equipped with overhead projector
Presentation board, computer and data show

Course Coordinator:	Prof. Ibrahim Galal Ibrahim Shaaban	Prof. Ahmed AdbulFattah Mahmoud Ahmed	Prof. Yusuf Mohamed Hashim Hammad
Course instructor:	Associate Prof. Gamal Taher AbdulRahman Fahmy	Associate Prof. Fouad Bakheet Aboud Beshara	Associate Prof. Maher AdbulRahman Ibrahim Adar
Head of department:	Prof. Ahmed AdbulFattah Mahmoud Ahmed		

Signature:

	D	M	Y
Date:	30	12	2011