Course Specifications (2011 - 2012)

A. Basic Information

Course Title	Geotechnical Engineering & Foundations (2)				Course Code:	CVS 421	
Lecture:	2	Tutorial:	2	Practical	0	Total	4
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:

Design and choose all types of deep foundation(rigid - elastic)-Retaining Back Soil

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.5) Recognize methodologies of solving engineering problems, data collection interpretation.
a.6) define quality assurance systems, codes of practice and standards, health and safety requirements and environmental issues.
a.13) Apply Engineering principles in the fields of reinforced concrete and metallic structures analysis and design, geo-techniques,

b. Intellectual Skills

b.2) Select appropriate solutions for engineering problems based on analytical thinking.

b.4) Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.
b.7) Solve engineering problems, often on the basis of limited and possibly contradicting information.
b.15) Analyze and select codes of practices in designing reinforced concrete and metallic structures of all types. Determine the

c. Professional and Practical Skills

c.1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to solve
c.7) Apply numerical modeling methods to engineering problems.

d. General and Transferable Skills

d.7) Search for information and engage in life-long self learning discipline.

3. Contents

Week #	Topics	No. of Hours	ILOS	Teaching / learning methods and	Assessment method
1	Sheet pile walls-Classifications	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam

2	Sheet pile walls-Cantilever	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Seminar / workshop	Oral exam
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
3	Sheet pile walls-Free Earth support	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
4	Pile foundations - Classifications	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
5	Pile foundations-Method of Constructions	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Seminar / workshop	Oral exam
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
6	Pile foundations-Pile Capacity	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
7	Pile foundations-Group action	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
8	Pile foundations-Settelement	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
9	Pile foundations- Design of pile cap	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
			a4,a5,a6,a13	Lectures	Assignments

10	Pile foundations-pile load test	4	b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
11	Caissons	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Seminar / workshop	Oral exam
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
12	open caissons	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
13	Beam on Elastic Foundation	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
14	Beam on Elastic Foundation	4	a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Seminar / workshop	Oral exam
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
15	Final Exam		a4,a5,a6,a13	Lectures	Assignments
			b2,b4,b7,b15	Case study	Quiz
			c1,c7	Tutorial	Mid-term exam
			d7	Computer based work	Final exam
Total		**56**			

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	a4,a5,a6,a13	b2,b4.b7,b15		
√	Quiz	to assess	a4,a5,a6,a13	b2,b4.b7,b15	c1,c7	
√	Mid-term exam	to assess	a4,a5,a6,a13	b2,b4.b7,b15	c1,c7	d7
√	Oral exam	to assess	a4,a5,a6,a13	b2,b4.b7,b15		
√	Final exam	to assess	a4,a5,a6,a13	b2,b4.b7,b15	c1,c7	d7
	Design Project	to assess				
	Report	to assess				
	Experimental write up	to assess				
	Informally assessment	to assess				
	Other	to assess				

6. Assessment schedule

Assessment 1 Assignments on weeks	2,5,9
Assessment 2 Quizzes on weeks	4,6,10
Assessment 3 Mid-term exam on week	8
Assessment 4 Oral Exam on week	14
Assessment 5 Final exam on week	15
Assessment 6 Design Project on weeks	
Assessment 7 Report on weeks	
Assessment 8 Experimental write up on weeks	
Assessment 9 Informally assessment	

7. Weighting of Assessments

Assignments	5%
Quiz	5%
Mid-term exam	10%
Oral exam	20%
Final exam	60%
Design Project	
Report	
Experimental write up	
Informally assessment	
Other	

Total	100%

8. List of References

8.1 Course Notes

Course notes prepared by Dr.Ezzat Abdel-rahiem mohamed

8.2 Essential Books (Text Books)

Bowles.J.E"Foundation analysis and design",McGraw Hill,1996,ISBN 0-07-912247-

8.3 Recommended Books

Brown,R.W.,"Practical foundation engineering handbook",Mc

8.4 Periodicals Web sites, etc

http://www.engineeringcivil.com/design-procedure-of-anchored-sheet-piles-in-sand.l
http://en.wikipedia.org/wiki/Deep_foundation

9. Facilities Required for Teaching and learning

Presentation board,computer and data show

Course Coordinator:	Prof. Azza Mohamed Khalil Allboudy	
Course instructor:	Dr. Ezzat AdbulRahim Mohamed Negem	
Head of department:	Prof. Ahmed AdbulFattah Mahmoud Ahmed	

Signature:

	D	M	Y
Date:	19	12	2011