

## Course Specifications (2011 - 2012)

### A. Basic Information

Course Title	Properties & Testing of Materials (2-B)			Course Code:	CVE 212		
Lecture:	3	Tutorial:	2	Practical	1	Total	6
Programme (s) on which this course is given:	B.Sc. Civil Engineering (General)						
Major or minor element of program:	Major						
Department offering the program:	Civil Engineering						
Department offering the course:	Civil 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:

To have basic knowledge on the durability and volume changes of concrete - to be able to choose suitable concrete mix for different exposure conditions - to understand mechanisms of concrete deterioration

#### 2. Intended Learning outcomes of Course (ILOs)

##### a. Knowledge and Understanding:

- a.3) Understand characteristics of engineering materials related to discipline.
- 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.
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##### b. Intellectual Skills

- b.9) Judge engineering decisions considering balanced costs, benefits, safety, quality, reliability, and environmental impact.

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


**c. Professional and Practical Skills**

c.12) Prepare and present technical reports.
c.13) Use laboratory and field equipment competently and safely.

**d. General and Transferable Skills**

d.3) Communicate effectively.
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	Causes of concrete deterioration	6	a3, a4	Lectures	Mid-term exam
			b9, b13	Practical training / laboratory	Assignments
			c12, c13	Class activity	Report
			d3, d7	Tutorial	Report

2	Absorption, porosity and permeability	6	a3, a4	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Report
			c12, c13	Class activity	Mid-term exam
					Other
3	Factors affection reinforcement corrosion	6	a3, a4, a5	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Mid-term exam
			c12, c13	Class activity	Report
					Other
4	Mechanism of reinforcement corrosion	6	a3, a5	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Mid-term exam
			c12, c13	Class activity	Final exam
			d3, d7	Tutorial	Report
5	Carbonation and sulphate attach	6	a3, a4	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Mid-term exam
			c12, c13	Class activity	Report
					Other
6	Improving concrete durability	6	a3, a4	Lectures	Assignments
			b13, b15	Practical training / laboratory	Report
			c12, c13	Class activity	Final exam
			d3, d7	Tutorial	Report
7	CRM - Admixtures - coatings	6	a3, a4	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Report
			c12, c13	Class activity	Final exam
			d3, d7	Tutorial	Report
8	Midterm Exam				
9	Code recommendations of concrete durability	6	a3, a4, a5	Lectures	Assignments
			b9, b13, b15	Class activity	Report
			c12, c13	Tutorial	Final exam
			a3, a4	Lectures	Assignments

10	Case study - report submittals	6	b9, b13, b15	Practical training / laboratory	Report
			c12, c13	Class activity	Final exam
11	Thermal properties of concrete	6	a3, a4	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Report
			c12, c13	Class activity	Final exam
12	Creep of concrete	6	a3, a4	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Report
			c12, c13	Class activity	Final exam
13	Factors affecting concrete deformation 1	6	a4, a5	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Final exam
			c12, c13	Class activity	Final exam
			d3, d7	Tutorial	Report
14	Factors affecting concrete deformations 2	6	a3, a4,, a5	Lectures	Assignments
			b9, b13, b15	Practical training / laboratory	Final exam
			c12, c13	Class activity	Final exam
			d3, d7	Tutorial	Report
15	Final Exam				
<b>Total</b>		<b>78</b>			

#### 4- Teaching and Learning Methods:

Check using the symbol  $\checkmark$

$\checkmark$	Lectures
$\checkmark$	Practical training / laboratory
	Seminar / workshop
	Class activity
$\checkmark$	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
√	Final exam	to assess
	Design Project	to assess
√	Report	to assess
	Experimental write up	to assess
	Informally assessment	to assess
	Other	to assess

a3, a4, a5	b9, b13, b15	c12, c13	
a3, a4, a5	b9, b13, b15		
a3, a4, a5	b9, b13, b15		
	b9, b13, b15	c12, c13	d3, d7

**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
- Assessment 6 Design Project on weeks
- Assessment 7 Report on weeks
- Assessment 8 Experimental write up on weeks
- Assessment 9 Informally assessment

6,10
8
15
12

**7. Weighting of Assessments**

Assignments	10%
Quiz	
Mid-term exam	20%
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

PDF files supplied

8.2 Essential Books (Text Books)

Egyptian code for design and construction of reinforced concrete buildings

Egyptain code, third appendix, Laboratory testing of concrete materials

8.3 Recommended Books

8.4 Periodicals Web sites, etc

9. Facilities Required for Teaching and learning

Data show

QC laboratory

Liberary

Computer, microsoft office, and printing facilities

Course Coordinator:

Prof. Mohamed Osama Ramadan

Course instructor:

Dr. Adel ALHendy AIGHaly Radwan

Head of department:

Prof. Ahmed AdbulFattah Mahmoud Ahmed

Signature:

Date:

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