

Course Specifications (2011 - 2012)

A. Basic Information

Course Title	Physics and Physical Chemistry			Course Code:	EMP 152		
Lecture:	2	Tutorial:	2	Practical	0	Total	4
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:	Engineering Mathematics Physics						
Academic Year of program:	First	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:

- Discuss the fundamentals and basic concepts of Physical Chemistry with emphasis on the properties of colloidal state and chemical adsorption.
- Describe the basic tools necessary to obtain Electro chemistry and corrosion and Building materials.

2. Intended Learning outcomes of Course (ILOs)

a. Knowledge and Understanding:

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| a.1) Recognize concepts and theories of mathematics and sciences, appropriate to the discipline. |
| a.5) Recognize methodologies of solving engineering problems, data collection interpretation. |
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b. Intellectual Skills

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| b.1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems. |
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2	Phase rule, Colloidal State	2	a5	Lectures	Assignments
			b7	Class activity	Experimental write up
			c7	Practical training / Laboratory	
			d5		
3	Atomic and molecular structure of materials	2	a1	Lectures	Assignments
			b2	Class activity	Experimental write up
				Practical training / Laboratory	
4	Gas Adsorption	2	a1	Lectures	Assignments
			b2	Class activity	Experimental write up
				Practical training / Laboratory	
5	Crystal structure of solids	2	a1	Lectures	Assignments
			b2	Class activity	Experimental write up
				Practical training / Laboratory	
6	Electro chemistry and corrosion	2	a1	Lectures	Assignments
			b2	Class activity	Experimental write up
				Practical training / Laboratory	
7	Crystal structure of solids	2		Lectures	Assignments
			b1	Class activity	Experimental write up
			c7	Practical training / Laboratory	
8	Midterm Exam	1			
9	Types of bonding in solid structures	2		Lectures	Assignments
			b1	Class activity	Experimental write up
			c7	Practical training / Laboratory	
			a1	Lectures	Assignments

10	Polymer Chemistry	2		Class activity	Experimental write up
			d1	Practical training / laboratory	
11	Defects in crystal lattice	2	a1	Lectures	
			b2	Class activity	
12	Chemistry of Building materials	2	a1	Lectures	
			b2	Class activity	
13	Properties of semiconductors	2	a5	Lectures	
				Class activity	
14	Pollution and its prevention, Chemical industries	2		Lectures	
			b7	Class activity	
15	Final Exam	3			
Total		30			

4- Teaching and Learning Methods:

Check using the symbol \checkmark

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

	Computer based work
	Other :

5- Student Assessment Methods:

Check using the symbol \checkmark

\checkmark	Assignments	to assess
	Quiz	to assess
\checkmark	Mid-term exam	to assess
	Oral exam	to assess
\checkmark	Final exam	to assess
	Design Project	to assess
	Report	to assess
\checkmark	Experimental write up	to assess
	Informally assessment	to assess
	Other	to assess

a1,a5	b1,b2,b7	c1,c7	d1,d5
a1,a5	b1	c1	d1,d5

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

1,2,3,5,6,7,9,10
8
15
1,2,3,5,6,7,9,10

7. Weighting of Assessments

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

Total

100%

8. List of References

8.1 Course Notes

• Lecture material and training sheets

8.2 Essential Books (Text Books)

8.3 Recommended Books

8.4 Periodicals Web sites, etc

9. Facilities Required for Teaching and learning

White board, overhead projectors.

Course Coordinator:

Associate Prof. Fathia Abd-EL-Raouf

Dr. Manal Mahmoud Talaat AlHefnawi

Course instructor:

Associate Prof. Fathia Abd-EL-Raouf

Dr. Manal Mahmoud Talaat AlHefnawi

Head of department:

Associate Prof. Ahmed Mohamed Abdullah Hayawar

Signature:

Date:

D	M	Y
4	12	2011