## Course Specifications (2011 - 2012)

#### A. Basic Information

Course Title		Physics and P	hysical Chemistry	1	Course Code:	EMP 152	
Lecture:	2	Tutorial:	2	Practical 0		Total	4
Programme (s) on which this course is given:				B.Sc. Civil Engineering (G		General)	
Major or minor element of program:			Major				_
Department offering the program:			Civil Engineering				
Department offering the course:		Engi	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:

d. Mowledge and Onderstanding.	
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.	

### 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.7) Solve engineering problems, often on the basis of limited and possibly contradicting information.
c. Professional and Practical Skills
c.1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to
c.7) Apply numerical modeling methods to engineering problems.
d. General and Transferable Skills
d.1) Collaborate effectively within multidisciplinary team.
d.5) Lead and motivate individuals.

## 3. Contents

	Week # Topics No.		No. of Hours	ILOS	Teaching / learning methods and	Assessment method
		Atomic and molecular structure of materials	2	a1	Lectures	Assignments
	1				Class activity	Experimental write up
ı				c1	Inheratory	

			a5	Lectures	Assignments
	Phase rule, Colloidal State	•	b7	Class activity	Experimental write up
2		2	c7	Ishoratory	
			d5	Jaharatory	
			a1	Lectures	Assignments
	Atomic and molecular structure	2	b2	Class activity	Experimental write up
3	of materials			Practical training /	
				Handrafor/	
			a1	Lectures	Assignments
4		2	b2	Class activity	Experimental write up
4	Gas Adsorption	2		Intractical training /	
				I A A A A A A A A A A A A A A A A A A A	
			a1	Lectures	Assignments
_	Crystal structure of solids	0	b2	Class activity	Experimental write up
5		2		Practical training /	
				TOPOTOTO !	
			a1	Lectures	Assignments
6	Electro chemistry and corrosion	2	b2	Class activity	Experimental write up
6				Ishoratory	
				Lectures	Assignments
7	Crystal structure of solids	2	b1	Class activity	Experimental write up
/	Crystal structure of solids	2	с7	Practical training /	
	NE Kong Engage	_			
8	Midterm Exam	1			
				Lectures	Assignments
	Types of bonding in solid		b1	Class activity	Experimental write up
9	structures	2	c7	Fractical training /	
			<u> </u>	laboratory	
			a1	Lectures	Assignments

10	Polymer Chemistry	2		Class activity	Experimental write up
			d1	Jahoratory	
			a1	Lectures	
11	Defects in crystal lattice	2	b2	Class activity	
	Dolocte III cryotal lattice	2			
			-1	Lastinas	
			a1	Lectures	
12	Chemistry of Building materials	2	b2	Class activity	
. —		_			
			_		
			a5	Lectures	
13	Properties of semiconductors	2		Class activity	
		_			
				Lectures	
14	Pollution and its prevention, Chemical industries	2	b7	Class activity	
		_			
	15 Final Exam				
15		3			
	Tatal	00			
	Total	30			

# 4- Teaching and Learning Methods:

Check using th	<u>ne symbol</u>	
$\sqrt{}$	Lectures	
$\sqrt{}$	Practical training / laboratory	
	Seminar / workshop	
$\sqrt{}$	Class activity	
	Case study	
	Project work	
	Tutorial	

Computer based work	
Other:	

# 5- Student Assessment Methods:

Check using th	,	
V	Assignments	to assess
	Quiz	to assess
V	Mid-term exam	to assess
	Oral exam	to assess
V	Final exam	to assess
	Design Project	to assess
	Report	to assess
V	Experimental write up	to assess
	Informally assessment	to assess
	Other	to assess

b1,b2,b7	c1,c7	d1,d5
1.4	. 4	14 15
ΓQ	<u> </u>	d1,d5
	b1,b2,b7	

## 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
15
4 2 2 5 6 7 0 40
1,2,3,5,6,7,9,10

### 7. Weighting of Assessments

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

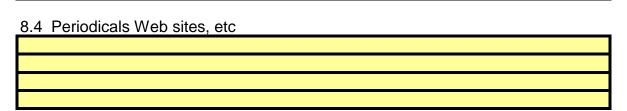
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### 8. List of References

<ul> <li>Lecture material and training sheets</li> </ul>	
8.2 Essential Books (Text Books)	

## 8.3 Recommended Books





White board, overhead projectors.

Course Coordinator:
Course instructor:
Head of department:

Associate Prof. Fathia Abd-EL-Raoof

Dr. Manal Mahmoud Talaat AlHefnawi

Associate Prof. Fathia Abd-EL-Raoof Dr. Manal Mahmoud Talaat AlHefnawi

Associate Prof. Ahmed Mohamed Abdullah Hayawar

Signature:

Date:

