



Department of Basic and Applied Science  
Smart Village Campus

**BA118**

**Chemistry**

**Fall 2013**

**Course Outline**

<b>Instructor:</b>	Dr. Ibrahim Hassan Mohamed										
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<b>Objective:</b>	<ul style="list-style-type: none"><li>• Introduce students to understand the basic information in engineering chemistry .</li><li>• Introduce students to understand the important chemistry topics for engineers.</li></ul>										
<b>Text:</b>											
<b>Grading:</b>	<p><u>Evaluating system</u></p> <table><tr><td>1- 7<sup>th</sup> Week Exam</td><td>30 marks</td></tr><tr><td>2- 12<sup>th</sup> Week Exam</td><td>20 marks</td></tr><tr><td>3- Lab Activity</td><td>10 marks</td></tr><tr><td>4- Final Exam</td><td>40 marks</td></tr><tr><td>Total</td><td><u>100 marks</u></td></tr></table>	1- 7 <sup>th</sup> Week Exam	30 marks	2- 12 <sup>th</sup> Week Exam	20 marks	3- Lab Activity	10 marks	4- Final Exam	40 marks	Total	<u>100 marks</u>
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Week of		E V E N T	
1	Sept.22 <sup>nd</sup>	<b>Lecture</b>	Introduction-electrochemical reactions-electro chemical cells
		<b>Lab</b>	Introduction and laboratory safety and concentration units.
2	Sept.29 <sup>th</sup>	<b>Lecture</b>	Electrochemical series-polarization-passivity
		<b>Lab</b>	Volumetric analysis.
3	Oct.6 <sup>th</sup>	<b>Lecture</b>	Definition of corrosion-metals & corrosive environments
		<b>Lab</b>	Titration method and demonstration.
	Oct.13 <sup>th</sup>	<b>Holiday</b>	
4	Oct.20 <sup>th</sup>	<b>Lecture</b>	Forms of corrosion , uniform , galvanic and D.A.C
		<b>Lab</b>	Determination of acidity and alkalinity+ <b>Quiz No. 1 (10 marks).</b>
5	Oct.27 <sup>th</sup>	<b>Lecture</b>	Pitting corrosion , S.C.C and I.G.C
		<b>Lab</b>	Water hardness, total hardness and dissolved oxygen+ <b>Quiz No. 2 (10 marks).</b>
6	Nov.3 <sup>rd</sup>	<b>Lecture</b>	Atmospheric corrosion, Erosion corrosion
		<b>Lab</b>	Determination of water hardness and Dissolved oxygen.
7	Nov.10 <sup>th</sup>	<b>Lecture</b>	Coating protection & inhibitors
		<b>Lab</b>	Oil analysis: Viscosity, Strong acid, Flash point+ <b>Quiz No. 3 (10 marks)</b>
8	Nov.17 <sup>th</sup>	<b>Lecture</b>	Cathodic protection
		<b>Lab</b>	Protection against corrosion using passivation.
9	Nov.24 <sup>th</sup>	<b>Lecture</b>	Classification of fuel
		<b>lab</b>	Determination of the inhibition efficiency for corrosion inhibitors.
10	Dec.1 <sup>st</sup>	<b>Lecture</b>	Properties of liquid fuel
		<b>Lab</b>	Protection against corrosion using cathodic protection+ <b>Quiz No.4 (10marks).</b>
11	Dec.8 <sup>th</sup>	<b>Lecture</b>	Combustion of fuel
		<b>Lab</b>	Spectrophotometric analysis+ <b>Quiz No. 5 (10 marks).</b>
12	Dec.15 <sup>th</sup>	<b>Lecture</b>	purpose of lubrication-classification of lubricants
		<b>Lab</b>	Determination of some metals, anions and pH+ <b>project discussion.</b>
13	Dec.22 <sup>nd</sup>	<b>Lecture</b>	Properties of lubricating oils-choice of lubricant-additives
		<b>Lab</b>	Combustion problems.
14	Dec.29 <sup>th</sup>	<b>Lecture</b>	Introduction-impurities in water
		<b>Lab</b>	Final lab exam
15	Jan.5 <sup>th</sup>	<b>Lecture</b>	Purification & treatment of water
		<b>Lab</b>	.....
16	Jan.12 <sup>th</sup>	<b>Final Exam</b>	

Good Luck