



KING ABDUL-AZIZ UNIVERSITY
ACADEMIC ASSESSMENT UNIT

COURSE PORTFOLIO

FACULTY OF MARITIME STUDIES

DEPARTMENT OF MARINE ENGINEERING

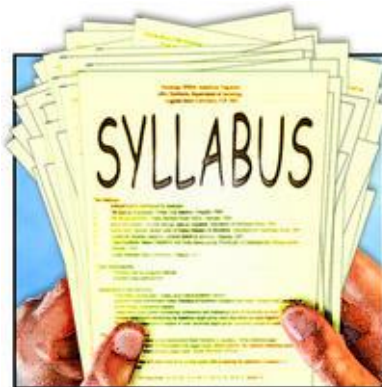
COURSE TITLE: ENGINEERING CHEMISTRY

COURSE CODE: MSE 281

LEVEL/YEAR: 3rd LEVEL/ 2nd YEAR

DATE: 2014

PART II



COURSE SYLLABUS

Instructor Information

- Name of the instructor: **Dr.Ibrahim Sadek**
- Office location: **Marine Engineering Department – Floor: 3rd – Room: TF 10**
- Office hours:

Sunday	11:00 to 13:00 pm
Wednesday	11:00 to 13:00 pm

- Contact number(s): **Phone: 6990798 ext. 402**
- Email: isibrahim@kau.edu.sa
- Instructor's profile : **See my webpage: isibrahim.kau.edu.sa**

Course Information

- Course title and code: **Engineering chemistry (MSE281)**
- Course meeting times, places:

Sunday	13:00 am to 15:50 pm	Lab.5
Tuesday	13:00 am to 14:50 pm	Lab.5

- Course prerequisites and requirements: **Ch110**
- Description of the course:

Electrochemical reactions, Electrochemical cells, Electrochemical series, Corrosion theory, Types of corrosion (uniform, galvanic, pitting, stress and erosion corrosion), Cathodic protection, Physical and chemical properties of fuel, Combustion of fuel, Purpose of lubrication, Types of lubricants, Oil analysis and natural gases, Nature of impurities in water, Water treatment and water analysis.

Course Objectives

By studying this course, the students are presumed to be able to:

- Explain the marine fuel oil refining process and fuel specifications.
- Explain the fuel contaminants and the methods of removal.
- Explain the fuel combustion process.
- Identify different types of lubricating oils and the main functions of lubricants.
- State the forms of natural gas and its properties.
- Specify the nature of water, the types of its impurities and the methods of removal.
- Explain the electrochemical reactions and state the different types of batteries.
- Explain the types of corrosion and the methods of corrosion control.

Learning Resources

- 1) M. Amer, 2003, "Engineering Chemistry", ISBN: 9775180082.
- 2) Wangersky, P. J. and O. Hutzinger, January 2000, "Marine Chemistry", Publisher: Springer Verlag, ISBN: 3540660208.

Course Requirements and Grading

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✍ Student assessment:

Two Quizzes	20 Marks	3rd & 10th Weeks
Midterm Exam	20 Marks	7th Week
Research Report	10 Marks	12th Week
Attendance & Class Activities	10 Marks	All along
Final Exam	40 Marks	15th Week

✍ Students have to respect University rules and ethics, and show good behavior. Absence of 25% of classes without official medical report might forbid the student from attending the final exam.

✍ Students are expected to show good attitudes, involvement, behaviors, skills, and ethics.

Detailed Course Schedule

✍ Detailed contents of topics and activities planned for each class session during the term.

✍ Reading assignments for each topic.

✍ Homework Assignments and Exam due dates.

(The following pages include templates of tables for course schedule and practical sessions)

**Course Schedule Model
(meeting two times a week)**

Week #	Date	Topic	Reading Assignment	What is Due?
1	8/04/2014	Introduction to engineering chemistry		
		Fuel oil refining processes		
2	15/04/2014	Marine fuel oil types	Chapter 1 Ref. 1	
		Fuel specifications	=	
3	22/04/2014	Different types of fuel contaminants	Chapter 1 Ref. 2	H.W. 1
		Quiz # 1		
4	29/04/2014	Methods of removing contaminants	=	
		Fuel combustion process	=	
5	6/05/2014	Fuel combustion process	=	H.W. 2
		Fuel combustion process	Chapter 2 Ref. 2	
6	12/05/2014	Fuel combustion process	=	
		Different types of lubricating oils	=	
7	17/05/2014	Main functions of lubricants	=	
		Midterm Exam		
8	21/05/2014	Natural gas composition	Chapter 4 Ref. 2	
		Forms of natural gas	=	
9	28/05/2014	Natural gas properties	=	
		Natural gas properties	=	

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Week #	Date	Topic	Reading Assignment	What is Due?
10	5/06/2014	Natural gas properties	Chapter 5 Ref. 2	
		Quiz # 2		
11	12/06/2014	Nature of water	Chapter 7 Ref. 2	
		Water impurities and methods of removal	Chapter 8 Ref. 2	
12	18/06/2014	electrochemical reactions	Chapter 11 Ref. 2	
		state the different types of batteries	=	Research Report
13	22/06/2014	Types of corrosion	Chapter 12 Ref. 2	
		Methods of corrosion control	Chapter 13 Ref. 2	
14	27/06/2014	Methods of corrosion control		Submitting of H.W.
		General Revision		Submitting of H.W.
15		Final Exam		

PART III



COURSE RELATED MATERIAL

Contains all the materials considered essential to teaching the course, includes:

Quizzes, lab quizzes, mid-terms, and final exams and their solution set

Paper or transparency copies of lecture notes/ handouts (optional)

Practical Session Manual (if one exists)

Handouts for project/term paper assignments

PART IV



EXAMPLES OF STUDENT LEARNING

Examples of student work. (Include good, average, and poor examples)

Graded work, *i.e.* exams, homework, quizzes

Students' lab books or other workbooks

Students' papers, essays, and other creative work

Final grade roster and grade distribution

Examples of instructor's written feedback of student's work, (optional)

Scores on standardized or other tests, before and after instruction, (optional)

Course evaluation, self evaluation or students' comments (optional)

PART V



INSTRUCTOR REFLECTION (optional)

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Part V. Instructor Reflections on the Course

- ✍ Instructor feedback and reflections
- ✍ Propose future improvement and enhancement
- ✍ Evaluate student competency and reflect on their course evaluation for improvements to the course
- ✍ Conceptual map of relationships among the content, objective, and assessment
- ✍ Recent trends and new approaches to teach the course.

COURSE PORTFOLIO CHECKLIST



TITLE PAGE



COURSE SYLLABUS



COURSE RELATED MATERIAL



EXAMPLES OF EXTENT OF STUDENT LEARNING