Teaching Plan

Subject Planning for Semester 17181/DIP (SEMESTER 1 SESSION 2017/2018)

Subject	**GENERAL CHEMISTRY I**
Subject Code	**DUK1113**
Credit Hours	3
Faculty	FAKULTI SAINS & TEKNOLOGI INDUSTRI
Passing Mark	40

Prerequisite

Equivalency **DUK1113
DAA1012
DMM1222

Synopsis

This course emphasizes basic understanding of chemistry. Students will be introduced to theories and basic concepts of chemistry. The first part of the course explains the basic concepts of matter such as atoms, atomic structure and the periodic table of elements. In this section also there are calculations of basic concepts in chemistry such as mole, concentration and balance equation which is often used in any field of engineering, especially chemical and mechanical engineering. The second part of the course is more focusing on the physical and chemical properties of materials. Properties of matter in gases, liquids and solids will be described. In addition, the reaction rate and the stability of matter in determining the direction the reaction will be explained. At the end of this course, students will master the theory, concepts and understandings of basic chemistry which is can be apply in engineering field.

Objective

1 Understanding the basic fundamental knowledge in chemistry focusing in physical and inorganic chemsitry.
1
2 Solving problems related to the basic understanding of chemistry using the scientific method
3 Work in group to complete the assigned tasks in a given time.

Contact Hour

Lecture	3
Tutorial	
Lab	

References

1 Martin S. Silberberg Principles of General Chemistry McGraw-Hill
2 Raymond Chang General chemistry : the essential concepts McGraw-Hill
3 James E. Brady General chemistry : principles and structure John Wiley
4 Stephen B. Barone Introduction to general chemistry Blackwell Science
5 James O. Glanville General chemistry for engineers Prentice Hall

Assessment Plan

QUIZ 1	4 %
ASSIGNMENT 1	10 %
QUIZ 2	4 %
TEST	20 %
QUIZ 3	4 %
ASSIGNMENT 2	10 %
QUIZ 4	4 %
QUIZ 5	4 %
FINAL EXAM	40 %

Subject Planning

Teaching Plan

Week	Chapter	Topic	Assessment
1	1	Matter 1 Atom and Molecules 2 Mole Concept 3 Concentration of Solutions 4 Stoichiometry	
2	2	Atomic Structure 1 Bohr,s Atomic Model 2 Quantum Mechanical Model 3 Electron Configuration	
3	3	Periodic Table 1 Representative Elements (Group IA - VIIA) 2 Transition Elements (IB - VIIB)	
4	3	Periodic Table 3 Physical Properties of Elements	QUIZ 1 4%
5	4	Chemical Bonding 1 Lewis Structure 2 Molecular Shape 3 Polarity Orbital	
6	4	Chemical Bonding 4 Overlap and hybridization 5 Intermolecular Forces 6 Metallic Bond	
7	5	State of Matter 1 Molecule Kinetic Theory 2 Gas	ASSIGNMENT 1 10% QUIZ 2 4%
8	5	State of Matter 2 Gas 3 Ideal Gas Equation 4 Liquid and Solution	TEST 20%
9		Mid Term Break	
10	5	State of Matter 5 Phase Diagram 6 Solid	
11	6	Kinetic 1 Reaction Rate 2 Kinetic Reaction Theory 3 Rate Law and Reaction Order	QUIZ 3 4%

Teaching Plan

Week	Chapter	Topic	Assessment
12	6	Kinetic 4 Methods of Determining the Rate of Reaction 5 Factor Affecting Reaction Rate	
13	7	Thermochemistry 1 System and Surrounding 2 Heat 3 Enthalpy and Enthalpy Change 4 Exothermic and Endothermic 5 Standard Enthalpy Change	ASSIGNMENT 2 10% QUIZ 4 4%
14	7	Thermochemistry 6 Standard Formation Enthalpy 7 Standard Fusion Enthalpy 8 Standard Neutralization Enthalpy	
15	7	Thermochemistry 9 Standard solution Enthalpy 10 Standard Atomization Enthalpy 11 Bonding Enthalpy 12 Hess Law	QUIZ 5 4%