Teaching Plan

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

Subject	**ORGANIC CHEMISTRY**
Subject Code	**BSK1103**
Credit Hours	3
Faculty	FAKULTI SAINS & TEKNOLOGI INDUSTRI
Passing Mark	40

Prerequisite

Equivalency

BSB1133
BSK1123
BSP1133

Synopsis

This course discuss the fundamental theory of properties, synthesis and organic reactions where use the functional group as framework. Focus on the key concepts of organic chemistry through a study of the reactions of selected functional groups. Particular emphasis is placed on the underlying some mechanistic pathways that are involved. The stereochemistry of the molecular structure is also considered. The development of key skills is facilitated by a program of consultancy and practical.

Objective

1 CO1-Describe the chemical structures, properties of common organic compounds and their reaction.
2 CO2-Explain the fundamental organic reactions, mechanism and reaction conditions.
3 CO3-Apply the fundamental organic chemistry in various industrial application.

Contact Hour

References

1 Janice Gorzynski Smith Organic chemistry 3rd ed Mc Graw-Hill.
2 T. W. Graham Solomons Organic chemistry 11 th edition Mc Graw-Hill
3 Paula Yurkanis Bruice Organic chemistry 6th ed Bruice, Paula Yurkanis
4 Leroy G. Wade Organic chemistry 7th Edition Mc Graw- Hill International Edition
5 John McMurry Organic chemistry 8th ed McMurry, John

Assessment Plan

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

Subject Planning

Week	Chapter	Topic	Assessment
1	1	Alkanes, Alkenes and Alkynes **1.1** General information about the organic chemistry **1.2** Nomenclature	

Week	Chapter	Topic	Assessment
		1.3 Physical properties of alkanes, alkenes, alkynes	
2	**1**	Alkanes, Alkenes and Alkynes **1.4** Synthesis of alkanes, alkenes, alkynes **1.5** Reactions of alkenes and alkynes **1.6** Applications of alkenes and alkynes	
3	**2**	Alcohols and Ethers **2.1** Nomenclature **2.2** Synthesis of alcohols and ethers	QUIZ 1 4%
4	**2**	Alcohols and Ethers **2.3** Reactions of alcohols ethers **2.4** Laboratory and industrial applications of alcohols and ethers	
5	**3**	Aromatic Compounds **3.1** Introduction of aromatic compounds **3.2** Kekule and Huckel's rule	QUIZ 2 4%
6	**3**	Aromatic Compounds **3.3** Heterocyclic aromatic compounds **3.4** Synthesis and reactions of benzene derivatives	
7	**4**	Carbonyl Compounds **4.1** Introduction of carbonyl compounds **4.2** Synthesis of aldehydes, ketones, acids and esters	TEST 1 20%
8	**5**	Stereochemistry **5.1** Stereochemistry **5.2** Basic concept in stereochemistry **5.3** Chiral centre, plane polarize light	
9	**5**	Stereochemistry **5.4** Enantiomer and diastereoisomers, properties with examples Meso compounds with examples **5.5** RS configuration (Cahn-Ingold-Prelog Priority System) with examples **5.6** Fischer man projection properties and examples	QUIZ 3 4%
10	**6**	Alkyl Halides **6.1** Introduction to alkyl halides **6.2** Chemistry of alkyl halides **6.3** General features of nucleophilic substitution **6.4** The polar carbon-halogen bond **6.5** Nucleophile and leaving group	QUIZ 4 4%

Teaching Plan

Week	Chapter	Topic	Assessment
11	6	Alkyl Halides **6.1** SN1 & SN2 reaction mechanism and detail studies with many examples **6.6** Nucleophilic substitution and organic synthesis **6.7** General features of substitution **6.8** Mechanisms of nucleophilic substitution **6.9** Mechanisms of nucleophilic substitution - stereochemistry	
12	7	Carbohydrates **7.1** Introduction to carbohydrates **7.2** What are carbohydrates classes of sugars and stereochemistry **7.3** Physical and chemical properties of carbohydrates **7.4** Cyclic and acyclic monosaccharides **7.5** Disaccharides and Haworth projections	QUIZ 5 4%
13	7	Carbohydrates **7.6** Chemistry of carbohydrates reactions at the carbonyl-oxidation and reduction **7.7** Glycosides and synthesis **7.8** Mutarotation epimerization **7.9** Polysaccharides, glycogen, starch and cellulose	TEST 2 20%
14	8	Introductory of Amino Acids **8.1** Amino acid and protein introduction **8.2** Types of protein classification of protein **8.3** Synthesis-alkylation of a diethyl malonate derivative **8.4** Chemistry of amino acids types of amino acid **8.5** Synthesis of amino acid - The Strecker Synthesis	
15		Study week	
16		Final examination	