



UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF CHEMISTRY EDUCATION
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Bachelor of Education in Chemistry

MODULE HANDBOOK

Module name:	Basic of Organic Chemistry
Module level, if applicable:	Undergraduate
Code:	KIM 6407
Sub-heading, if applicable:	-
Classes, if applicable:	2
Semester:	3
Module coordinator:	C. Budimarwanti, M.Si
Lecturer(s):	Karim Th, SU; Dra. Cornelia Budimarwanti, M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	<ul style="list-style-type: none">• Lectures: 150 minutes lectures, 180 minutes structured activities and 180 minutes individual study per week• Laboratory Work: 170 minutes includes the laboratory work and it's report per week.
Workload:	Total workload of the activity is hours per semester which consist of 150 minutes lectures, 180 minutes structured activities and 180 minutes individual study per week, and 170 minutes include laboratory work and it's report.
Credit points:	3SKS (4.92 ECTS) lectures, and 1SKS (1,64 ECTS) laboratory Work
Prerequisites course(s):	-
Course outcomes:	After taking this course, the students are expected to be able to: CO1. able to describe various concepts of the organic molecules structure CO2. <ul style="list-style-type: none">• resonant structures of various compounds for the basis of organic reactions• properties, structure, nomenclature and reaction of alkanes and cycloalkanes• conformation of alkanes and cycloalkanes• properties, structure, nomenclature and addition and oxidation reactions of alkene and alkyne compounds• properties, structure, nomenclature and substitution reactions and elimination of haloalkanes• aromaticity of aromatic compounds• properties, structure, nomenclature and substitution reactions of benzene compounds and their derivatives• properties, structure, nomenclature and reaction of alkanol

	<p>compounds, alkoxyalkanes, thiols and diols</p> <ul style="list-style-type: none"> • properties, structure, nomenclature and reaction addition of carbonyl groups alkanal and alkanone compounds • properties, structure, nomenclature and reaction of alkanolic acid compounds • properties, structure, nomenclature and reaction of alkanolic acid derivative compounds • properties, structure, nomenclature and reaction of amine nitrogen compounds <p>CO3. be able to do lab work and scientific work in the laboratory to solve problems or prove theories related to the structure of organic molecules, properties, and structures of alkane compounds, cycloalkanes, aromatic compounds, benzene and derivatives, alkanols, alkoxyalkanes, thiols, diols, alkanal compounds and alkanon, alkanolic acid compound, amine compound</p>
Content:	<p>This course covers the theory and practice which includes the materials of:</p> <ol style="list-style-type: none"> 1. The basic concepts of organic reactions are the structure of organic molecules, Kekule, Lewis, Pauling, resonant and conjugate structures 2. Structure, nomenclature, nature, oxidation reaction and mechanism of substitution and conformation reactions of alkane and cycloalkane compounds. 3. Structure, nomenclature, nature and mechanism of addition reactions to alkene and alkyne. 4. Structure, nomenclature, nature, and mechanism of the reaction of halo alkane compounds, SN1 / E1 and SN2 / E2 and SN 5. Structure, nomenclature, aromaticity and mechanism of SE reactions to benzene and its derivatives. Steering group o / p, guide m. Stabilizer and stabilizing groups. 6. Structure, nomenclature, nature and mechanism of reaction of alkanol compounds, alkoxy alkane, diol and thiol. 7. Structure, nomenclature, nature and mechanism of reaction of alkanal and alkanon compounds. 8. Structure, nomenclature, nature and mechanism of reaction of alkanolic acid compounds. 9. Structure, nomenclature, nature and mechanism of reaction of alkanolic acid derivative compounds. 10. Structure, nomenclature, nature and mechanism of reaction of amine nitrogen compounds
Study / exam achievements:	<p>Attitude assessment is carried out at each meeting by observation and/or self-assessment techniques using the assumption that basically every student has a good attitude. The student is marked very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not taken into account in the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.</p>

	The final mark will be weight as follow:				
	No	CO	Assessment Object	Assessment Technique	Weight
	1	CO1, CO2, CO3.	Assignments Final Exam Activities Labwork	Presentation / written test	40% 20% 10% 30%
	Total				100%
Forms of media:	Board, LCD Projector, Laptop/Computer, Module				
References:	McMurry, John., 2016. <i>Organic Chemistry 9th Ed</i> : Cengage Learning. Bruice, P.Y., 2007. <i>Organic Chemistry 5th Ed</i> : Pearson Prentice Hall. Allinger et al., (1980), <i>Organic Chemistry</i> , New York: Worth Publisher Inc Francois A Carey (2002), <i>Organic Chemistry</i> , New York: Mc Graw Hill Inc. Karim Th, (2015), <i>Kimia Organik I, Mekanisme Reaksi Organik Melalui Penelusuran Elektron Phi</i> , Yogyakarta: UNY Press				

PLO and CO mapping

	PLO					
	Attitude		Knowledge	Specific Skill	General Skill	
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1						√
CO2			√			
CO3				√		