



MINISTRY OF EDUCATION, CULTURE, RESEARCH,
AND TECHNOLOGY

UNIVERSITAS NEGERI SURABAYA

FACULTY OF MATHEMATICS AND NATURAL SCIENCES

Ketintang Campus, D-1 Building, Surabaya 60231 +6231-8296427

Website: www.fmipa.unesa.ac.id, email: info_fmipa@unesa.ac.id

Master Program of Science Education

Module Handbook

Module Name :	<i>Kajian Sains Kimia III/ Study of Chemical Science III*</i>
Module level :	<i>Master Program of Science Education</i>
Course Code :	<i>8410102201</i>
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	<i>Not Applicable</i>
Semester/Term	<i>1st /Second Year</i>
Module coordinator(s)	<i>Prof. Dr. Suyatno, M.Pd.</i>
Lecturer(s):	<i>Prof. Dr. Suyatno, M.Pd.</i>
Language:	<i>Indonesian Language</i>
Classification within the curriculum:	<i>Compulsory/ Elective</i>
Teaching format/class hours per week during the semester:	<i>2 contact hours of lectures (Indonesia credit semester or CU*)</i>
Workload :	<i>2 x 50 minutes lectures, 2 x 90 minutes structured activity, 2x 100 minutes individual activity, 14 weeks per semester, 112 total hours per semester ~ 4.48 ECTS**</i>
Credit Point:	<i>2 CU (4.48 ECTS)</i>
Requirements:	
Learning goals/competencies:	<p>Knowledge (KNO-2) <i>CLO-1 Assessing and analyzing various concepts of organic chemistry needs to solve research problems or other relevant problems to produce creative, original, and tested works</i></p> <p>Competency (COM-3) <i>CLO-2 Creating organic chemistry concepts and other related field theories through iset and improvisation of school and / or field learning. CLO-3 Design research independently by optimizing the use of theory and practice organic chemistry in school laboratories and/or in the field.</i></p>
Content	<i>This course examines the concepts of organic chemistry, regarding stereochemistry (including optical isomers, space isomers, optical activity, and conformation analysis); addition reaction mechanism (including double addition reaction between carbon atoms, double bond addition reaction between carbon and other atoms); mechanism of elimination reactions; mechanisms of aromatic</i>



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	<i>nucleophilic substitution reactions (including nitration, halogens, sulfonations, alkylations and acylations); rearrangement in the formation of carbonium; nitronium ions; carbena and nitrena; as well as other organic chemical mechanisms of catabolism and macromolecular anabolism. This material presentation strategy includes presentations and discussions of independent and/or group tasks.</i>																														
<i>Attribute Soft skill:</i>	<i>Scientific report, public speaking, and team work</i>																														
<i>Study/exam achievements:</i>	<p><i>Students are considered to be competent and pass if at least get 70. Final score is calculated as follows: 20% Participation + 30% Assignment + 20% Middle Exam (UTS) + 30% Final Exam (UAS)</i></p> <p>Final index is defined as follow:</p> <table border="1"> <thead> <tr> <th><i>Index</i></th> <th><i>Converted Score</i></th> <th><i>Score Range</i></th> </tr> </thead> <tbody> <tr> <td>A</td> <td>4.00</td> <td>$85 \leq A \leq 100$</td> </tr> <tr> <td>A-</td> <td>3.75</td> <td>$80 \leq A- < 85$</td> </tr> <tr> <td>B+</td> <td>3.50</td> <td>$75 \leq B+ < 80$</td> </tr> <tr> <td>B</td> <td>3.00</td> <td>$70 \leq B < 75$</td> </tr> <tr> <td>B-</td> <td>2.75</td> <td>$65 \leq B- < 70$</td> </tr> <tr> <td>C+</td> <td>2.50</td> <td>$60 \leq C+ < 65$</td> </tr> <tr> <td>C</td> <td>2.00</td> <td>$55 \leq C < 60$</td> </tr> <tr> <td>D</td> <td>1.00</td> <td>$40 \leq D < 55$</td> </tr> <tr> <td>E</td> <td>0.00</td> <td>$0 \leq E < 40$</td> </tr> </tbody> </table>	<i>Index</i>	<i>Converted Score</i>	<i>Score Range</i>	A	4.00	$85 \leq A \leq 100$	A-	3.75	$80 \leq A- < 85$	B+	3.50	$75 \leq B+ < 80$	B	3.00	$70 \leq B < 75$	B-	2.75	$65 \leq B- < 70$	C+	2.50	$60 \leq C+ < 65$	C	2.00	$55 \leq C < 60$	D	1.00	$40 \leq D < 55$	E	0.00	$0 \leq E < 40$
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<i>Learning Methods :</i>	<i>Case Method, Discussion, and Article Review</i>																														
<i>Form of Media:</i>	<i>Power Point slides, e-book file, and multimedia.</i>																														
<i>Literature (primary references):</i>	<ol style="list-style-type: none"> Bailey Jr., P.S. dan Bailey, C. A. (1995). <i>Organic chemistry: a brief concepts and applications</i>. 5th edition. New Jersey: Prentice Hall. Carey, F. A. (2000). <i>Organic chemistry</i>. 4th edition. New York: M-Hill. 																														
<i>Notes:</i>	<p><i>*1 CU in learning process = three periods consist of: (a) scheduled instruction in a classroom (50 minutes); (b) structured activity (90 minutes); and (c) individual activity (100 minutes) according to according to Rector Decree of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2020</i></p> <p><i>**1 CU = 2.24 ECTS according to Rector Decree of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2020</i></p> <p><i>*Total ECTS = (total hours workload/ 60 min) / 25 hours</i></p> <p>Each ECTS is equals with 25 hours</p>																														
<i>Last Amendment</i>	<i>5 January 2023</i>																														