



UNIVERSITAS NEGERI JAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
CHEMISTRY STUDY PROGRAM

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Bachelor in Chemistry

MODULE HANDBOOK

Module name:	Synthesis of organic chemistry
Module level, if applicable:	Undergraduate
Code:	33250462
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	6 th
Module coordinator:	Dr. Fera Kurniadewi, M.Si.
Lecturer(s):	1. Dr. Fera Kurniadewi, M.Si. 2. Dr. Hanhan Dianhar, M.Si.
Language:	Indonesia
Classification within the curriculum:	Elective Courses in the third year (6 th semester) Bachelor Degree
Class Size:	20
Type of Teaching	In class activity : Team Based Project and Project based Learning Structured activity : Group Discussion using WorkSheet Independent activity : Individual task
Teaching format / class hours per week	Learning activity can be carried out in the form of : 1. Lecture or students response a. Face to face : 50 minutes/SKS b. Structured activity : 60 minutes/SKS c. Independent activity : 60 minutes/SKS
Workload:	1 CU (SKS) for bachelor degree equal to 4 work hours per week or 170 minutes. 2x50 minutes face to face, 2x60 minutes structured tasks,
Credit points:	2 SKS (3.00 ECTS)
Prerequisite course(s):	Basic of organic chemistry, Stereochemistry, organic compound reaction and mechanism

Program Learning Outcome:	<ol style="list-style-type: none"> PLO-5: Able to master the knowledge of chemistry (organic, inorganic chemistry, analytical, physical and biochemical) which includes structure, properties, functions, changes, energy and dynamics, identification, separation, characterization, transformation, and synthesis of micromolecular chemicals and their applications. PLO-6: Understand concepts and applications in the fields of bioscience and chemistry materials to solve problems in chemistry and applied fields 															
Course Outcomes :	<p>After taking this course the students have ability to:</p> <ol style="list-style-type: none"> CLO-1. Understand the relationship between organic reactions and organic synthesis. CLO-2. Designing interconversion of functional groups in reaction steps. CLO-3. Perform retrosynthetic analysis to determine the route of synthesis of a target compound. CLO-4. Explain the formation of umpolung as a strategy for the synthesis of organic molecules. CLO-5. Suggest an aromatic ring functionalization strategy. CLO-6. Analyzing aspects of organic synthesis in research and industry. 															
Content:	<ol style="list-style-type: none"> Organic Reaction and Organic Synthesis Functional group interconversion Retrosynthetic Analysis Umpolung Aromatic ring functionalization Aspects of organic synthesis in research and industry 															
Study/exam achievements:	<p>Examinations are conducted as Unit Tests. There are two-unit tests, each covers 4-5 chapters. The final marks are derived from unit tests (70%) and structured tasks (30%).</p> <table border="1" data-bbox="586 1287 1422 1602"> <thead> <tr> <th>No.</th> <th>CO</th> <th>Assesment Object</th> <th>Assessment Techniques</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CLO 1-6</td> <td> <ol style="list-style-type: none"> Attitude General skills Especially skills Knowledge </td> <td>Written test</td> <td> 5% 10% 10% 50% </td> </tr> <tr> <td colspan="4" style="text-align: right;">Total</td> <td>100%</td> </tr> </tbody> </table>	No.	CO	Assesment Object	Assessment Techniques	Weight	1	CLO 1-6	<ol style="list-style-type: none"> Attitude General skills Especially skills Knowledge 	Written test	5% 10% 10% 50%	Total				100%
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1	CLO 1-6	<ol style="list-style-type: none"> Attitude General skills Especially skills Knowledge 	Written test	5% 10% 10% 50%												
Total				100%												
Media	Power point presentation, LMS, Zoom, Microsoft Teams, laptop.															

Literatures	<ol style="list-style-type: none"> 1. Warren, S., Wyatt, P. 2011. <i>Organic Synthesis: The Disconnection Approach 2nd Edition</i>. John Wiley and Sons Inc. 2. Clayden, J., Greeves, N., Warren, S. 2012. <i>Organic Chemistry</i>, 2nd edition. Oxford University Press 3. Solomons, T. W. G., Fryhle, C., Snyder, S. 2012. <i>Organic Chemistry</i>, 11th edition. John Wiley and Sons Inc. 4. Kurti, L., Czako, B., <i>Strategic Applications of Named Reactions in Organic Synthesis</i>. Elsevier Academic Press 5. Jurnal ilmiah dan paper yang berkaitan dengan penelitian sintesis organik.
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PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
CO1					V	V						
CO2					V	V						
CO3					V	V						
CO4					V	V						
CO5					V	V						
CO6					V	V						