UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF CHEMISTRY
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Bachelor of Science in Chemistry **MODULE HANDBOOK**

Module name:	Isolation and Identification of Natural Material Compounds
Module level, if applicable:	Undergraduate
Code:	KMA 6232
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	7th
Module coordinator:	Prof. Dr. Sri Atun
Lecturer(s):	1. Prof. Dr. Sri Atun 2. Dr. Sri Handayani
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	Lectures: 100 minutes lectures, 120 structured activities and 120 individual study per week
Workload:	Total workload of the activity is 90,67 hours per semester which consists of 100 minutes lectures, 120 structured activities and 120 individual study per week for 16 weeks
Credit points:	2 SKS (3 ECTS)
Prerequisites course(s):	-
Course Outcomes	After taking this course, the students have ability to: CO1. Explain the characteristics of organic compounds in natural product CO2. Explain various methods of isolation of natural compound CO3. Explain several chromatographic methods CO4. Explain the technique of identifying natural compounds using the UV, IR spectroscopic method

<table>
<tr><td></td><td>CO5. Able to explain identifying using NMR method
CO6. Able to explain identifying using MS method
CO7. Understand the method of isolation and identification of the structure of compounds from terpenoids
CO8. Understand the method of isolation and identification of the structure of compounds from steroids
CO9. Understanding the method of isolation and identification of the structure of compounds of the class Flavonoids, Phenyl propanoids, polyketides, and polyphenols
CO10. Understand the method of isolation and identification of the structure of compounds from alkaloids</td></tr>
<tr><td>Content:</td><td>This course discusses Learn various isolation techniques and identify the structure of organic compounds of natural materials, which include classes of compounds: terpenoids, steroids, flavonoids, polyketides, polyphenols, alkaloids, as well as some examples of useful natural compounds, found in plant families. Lecture emphasizes the mastery of lecture material logically and scientifically and the ability to use scientific methods to solve problems faced by students</td></tr>
<tr><td>Study / exam achievements:</td><td>The final mark will be weight as follow:

<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td rowspan="7">CO1, CO2, CO3, CO4, CO5, CO6, CO7, CO8, CO9, CO10</td><td>Structural assignment: ability to rasionalize and describing</td><td>Assignment</td><td>15%</td></tr>
<tr><td>2</td><td>Structural assignment: ability to applying the formula according to context</td><td>Assignment</td><td>10%</td></tr>
<tr><td>3</td><td>Structural assignment: ability to collaborate, analyze, rasionalize, and communicate</td><td>Assignment</td><td>15%</td></tr>
<tr><td>4</td><td>Individual assignment: skill to collect literacy, understanding, and describing</td><td>Assignment</td><td>10%</td></tr>
<tr><td>5</td><td>Mid term exam</td><td>Written test</td><td>20%</td></tr>
<tr><td>6</td><td>Presentation</td><td>Written test</td><td>30%</td></tr>
<tr><td colspan="3"></td><td>Total</td><td>100%</td></tr>
</table>
</td></tr>
</table>

Forms of media:	Board, LCD Projector, handouts, PPT slides, and stationaries
Reference:	A. Grabley R.T., (1999), Drug discovery from nature, Springer-Verlag, Berlin B. Harborne, J.B. (2006). Metode Fitokimia: Penuntun Cara Modern Menganalisis Tumbuhan (alih bahasa: Kosasih Padmawinata & Iwang Soediro). Bandung : Penerbit ITB. C. Hostettman, K., Hostettman, M., & Marston, A. (1986). Cara Kromatografi Preparatif. (Alih bahasa: Kosasih P). Bandung: ITB. D. Sjamsul A.A. (1986). Buku Materi Pokok Kimia Organik Bahan Alam, Karunika, Jakarta, Universitas Terbuka. E. Sri Atun, *et al*, (2003), Biochemical Systematics and Ecology 32 (11) F. Sri Atun, *et. al*, (2006), Biochemical. Systematic And Ecology 34 G. Sri Atun, *et. al*, (2008), J Physical Science, 19 (2), 7-21 H. Sri Atun, *et. al*., (2015), International Journal of Pharmacognosy and Phytochemical Research, 7, 2,262-269 I. New article from International Journal Natural product; Phytochemistry, dll

PLO and CO mapping

CO	PLO									
	Attitude	Generic Skills		Knowledge				Specific Skills		
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1					✓					
CO2					✓					
CO3					✓					
CO4							✓			
CO5							✓			
CO6							✓			
CO7									✓	
CO8									✓	
CO9									✓	
CO10					✓					