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:	**Natural Material Chemistry**
Module level, if applicable:	Undergraduate
Code:	KMA 6207
Sub-heading, if applicable:	-
Classes, if applicable:	1
Semester:	Odd
Module coordinator:	Sukisman Purtadi, M.Pd.
Lecturer(s):	Regina Tutik Padmaningrum, M.Si
Language:	Bahasa Indonesia
Classification within the curriculum:	Elective Course
Teaching format / class hours per week during the semester:	Lectures: 100 minutes lectures, 120 minutes structured activities and 120 minutes individual study per week
Workload:	Total workload of the activity is 136 hours per semester which consist of 100 minutes lectures, 120 minutes structured activities, 120 minutes individual study per week.
Credit points:	2SKS (3.28 ECTS)
Prerequisites course(s):	-
Course Outcomes	After taking this course the students are expected to be able to: CO1: Students show a responsible and independent attitude in completing the work given CO2: Students are able to master theoretical concepts and analyze secondary metabolite compounds based on their basic framework and make biogenetic relationships of compounds found in one family CO3: Students analyze the results of research on secondary metabolites from articles in the latest journal
Content:	This course covers the classification, structure, nature, origin of biogenesis, biosynthesis, ways of isolation, and its identification which includes classes of terpenoid compounds, steroids, flavonoids, polyketides, polyphenols, alkaloids, as well as several examples of useful natural compounds, found in various families plant 1. Definition of natural material compounds, classification, structure, properties, origin of biogenesis, biosynthesis, 2. Insulation methods, and identification of natural material compounds 3. Characteristics of terpenoid and steroid compounds 4. Characteristics of flavonoid, polyacidide, polyphenol compounds 5. Characteristics of alkaloid group compounds 6. Characteristics of useful natural compound compounds

<table>
<tr><td></td><td>found in various plant families</td></tr>
<tr><td>Study/exam achievements:</td><td>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 given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass this course if at least they show a good attitude. The final mark will be weighted as follows:
<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>CO1,
CO2,
CO3,</td><td>Assignments
Activity
Final Exam
Midterm Exam</td><td>Presentation / written test</td><td>20%
20%
30%
30%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table></td></tr>
<tr><td>Forms of media:</td><td>Board and Board markers, LCD Projector, Laptop/Computer, Modules, Power Point Slides</td></tr>
<tr><td>References:</td><td>
Harborne, J.B. (2006). Metode Fitokimia: Penuntun Cara Modern Menganalisis Tumbuhan (alih bahasa: Kosasih Padmawinata & Iwang Soediro). Bandung : Penerbit ITB.
Schaefer, B. 2015. Natural Products in The Chemical Industry: Springer
Grabley R.T., (1999), Drug discovery from nature, Springer-Verlag, Berlin
Sjamsul A.A. (1986). Buku Materi Pokok Kimia Organik Bahan Alam, Karunika, Jakarta, Universitas Terbuka
Scientific Article on the International Journal: Phytochemistry; Organic chemistry; Natural product; etc
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PLO and CO mapping

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