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

Module name:	Products of Chemical Technology
Module level, if applicable:	Undergraduate
Code:	MPK 6217
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	6th
Module coordinator:	Dr. Das Salirawati
Lecturer(s):	**Dewi Yuanita Lestari, M.Sc** and Marfuatun, MSi
Language:	Bahasa Indonesia and English
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 ECTS)
Prerequisites course(s):	-
Course Outcomes	After taking this course the students have ability to: CO1 Able to show independence in completing college assignments CO2 Able to apply chemical concept in the manufacture of food products in the form of black garlic CO3 Able to apply chemical concept in the manufacture of nonfood products in the form of soap CO4 Able to adapt skills in making food products in the form of black garlic, nata and vco CO5 Have skills in the technology of making non-food products in the form of essential oils and soaps CO6 Have critical thinking skills to process food in the form of nata and vco into other products CO7 Able to adapt critical thinking skills in the application of the use of essential oils into other product
content:	This course discusses knowledge and skills about simple chemical technology that can be developed into everyday products.
Study / exam achievements:	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.

<table>
<tr><td></td><td>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 from this course if at least have a good attitude. 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>CO1, CO2, CO3, CO4, CO5, CO6, CO7</td><td>1. Activities and Assignments
2. Mid-term exam
3. Final Exam</td><td>Practice and Presentation
Written test
written test</td><td>60%
20%
20%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table></td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
<tr><td>Literature:</td><td>1. Shunsuke Kimura , Yen-Chen Tung, Min-Hsiung Pan , Nan-Wei Su , Ying-Jang Lai, Kuan-Chen Cheng,2016, Black garlic: A critical review of its production, bioactivity, and application . journal of food and drug analysis. 1-9
2. Agarwal RK, Bosco SJD (2017) Extraction Processes of Virgin Coconut Oil. MOJ Food process Technol 4(2): 00087 DOI: 10.15406/mojfpt.2017.04.00087
3. Miguel Gama, Fernando Dourado and Stanislaw Bielecki, 2017, Bacterial nanocellulose, Science direct
4. Monica Butnariu, Ioan Sarac, 2018. Essential Oils from Plants, Journal Biotechnology and Biomedical Science Vol 1 No 4
5. Luis Spitz, 2016, Soap Manufacturing Technology, 2nd Edition, Academic Press and AOCS Press</td></tr>
</table>

PLO and CO mapping

	PLO					
	Attitude		Knowledge	Specific Skill	General Skill	
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1		√				
CO2			√			
CO3			√			
CO4				√		
CO5				√		
CO6					√	
CO7					√	