



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:	Food Material Chemistry
Module level, if applicable:	Undergraduate
Code:	KMA 6237
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	7 th
Module coordinator:	Sunarto, M.Si
Lecturer(s):	1. Sunarto, M.Si. 2. Dr. Retno Arianingrum 3. Susila Kristianingrum, M.Si.
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Elective Subject
Teaching format / class hours per week during the semester:	100 minutes lectures, 120 structured activities and 120 individual study per week
Workload:	Total workload 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 are expected to be able to:
	CO1 Explain alternative strategies to overcome the problem of hazardous chemicals in the community
	CO2 analyze the nutritional content, heat additives and pollutants in qualitative and quantitative materials
	CO3 Presenting food research and publishing appropriate analytical concepts
Content:	<p>This lecture is an activity that broadens students' understanding of the basic concepts of foodstuffs and chemical compounds related to foodstuffs including humidity, carbohydrates, proteins, fats, minerals, vitamins, additives and polluting elements, analysis of these chemical compounds in foodstuffs and current trends in food research. Lectures are carried out through inquiry and expository approaches through classical lectures, discussions, independent assignments and seminars using computer-aided media.</p> <ul style="list-style-type: none"> • Basic concepts of food chemistry • Carbohydrates and their method of analysis • Protein and analytical methods • Fat and oil and the method of analysis

	<ul style="list-style-type: none"> • Vitamins and analytical methods • The basic concept of food additives and the method of analysis • Substances polluting natural food • Food research trends 															
Study / exam achievements:	<p>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 marked very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not taken into account in 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:</p> <table border="1"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CO1, CO2, CO3,</td> <td>a. Assignments b. Activity c. Final Exam d. 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> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1, CO2, CO3,	a. Assignments b. Activity c. Final Exam d. Midterm Exam	Presentation / written test	20% 20% 30% 30%	Total				100%
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1	CO1, CO2, CO3,	a. Assignments b. Activity c. Final Exam d. Midterm Exam	Presentation / written test	20% 20% 30% 30%												
Total				100%												
Forms of media:	Handout, Board, LCD Projector, Laptop/Computer, Module															
References:	<ul style="list-style-type: none"> • Laurence Melton, Peter Varelis, Fereidoon Shahidi. 2019. Encyclopedia of Food Chemistry. Elsevier Inc. All. • deMan, J.M., Finley, J., Hurst, W.J., Lee, C. 2018. Principles of Food Chemistry, food science tex series. Springer International Publishing AG. • Farhoosh, Laura Nyström. 2018. Antioxidant potency of gallic acid, methyl gallate and their combinations in sunflower oil triacylglycerols at high temperature. Food Chemistry. Vol 244. 29-35. • F.G. Winarno, 2004. Kimia Pangan dan Gizi, Jakarta: PT.Gramedia Pustaka Utama • Slamet Sudarmadji, dkk., 2003. Analisa Bahan Makanan dan Pertanian, Yogyakarta: Penerbit Liberty bekerja sama dengan PAU Pangan dan Gizi UGM • Anton Apriyantono, dkk. 1989. Analisis pangan. Bogor: PAU Pangan dan Gizi IPB • DeMan, John. 1999. Principles of Food Chemistry. Gaithersburg, Maryland: An Aspen Publication • Pare, J.R.J and Belanger, J.M.R. 1997. Instrumental Methods In Food Analysis. Amsterdam: Elsevier. 															

PLO and CO mapping

	PLO										
	Attitude	General Skill			Knowledge				Specific Skill		
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	
CO1					√						
CO2							√				
CO3									√		