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:	**Environmental Chemistry**
Module level, if applicable:	Undergraduate
Code:	KIM 6215
Sub-heading, if applicable:	-
Classes, if applicable:	2
Semester:	5th
Module coordinator:	Prof. AK. Prodjosantoso, Ph.D
Lecturer(s):	Dra. Regina Tutik Padmaningrum, M.Si.; **Erfan Priyambodo, S.Pd.Si.,M.Si.**
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Compulsory Subject
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 Outcome:	After taking this course, the students are expected to be able to: CO1. describe the basic concepts of various sources, reactions, transportation, effects and fate of chemical species in the air, water and soil environment, and also the influence of human activities on these processes. CO2. understand the ways to prevent and overcome various problems caused by chemicals in the environment. CO3. apply ways to prevent and overcome various problems caused by chemicals in the environment in everyday life. CO4. compile and present written and oral reports in solving environmental problems
Content:	This course provides experience for students to analyze chemical concepts related to the interaction of chemicals with the biotic, abiotic, and social environments. Lecture material is focused on the sources, reactions, transportation, effects and fate of chemical species in the air, water and soil environment, and also the influence of human activities on these processes. Lectures are carried out with discussions, demonstrations, and assignments that provide students with experience in solving environmental problems. 1. Air Environment

<table>
<tr><td></td><td>2. Land Environment
3. Water Environment
4. Solving the problem of environmental pollution in terms of chemical aspects.</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 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:
<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.</td><td>Assignment
Presentation
Final Exam
Midterm Exam</td><td>Presentation / written test</td><td>30
15
25
30</td></tr>
<tr><td colspan="3"></td><td>Total</td><td>100</td></tr>
</table></td></tr>
<tr><td>Forms of media:</td><td>Handout, Board, LCD Projector, Laptop/Computer, Module.</td></tr>
<tr><td>References:</td><td>
Prodjosantoso, A.K. dan Padmaningrum, R.T. (2011).Kimia Lingkungan: Teori, Eksperimen, dan Aplikasinya, Yogyakarta: Kanisius
Girard, J. (2010).Principles of Environmental Chemistry, Sudbury: Jones & Bartlett Learning
Lichtfouse, E., Schwardzbauer, J. & Robert, D. (2005). Environmental Chemistry: Green Chemistry and Pollutants in Ecosystem. New York: Springer
Andrews, J.E., et.al (2004). An Introduction to Environmental Chemistry. Hongkong: Blackwell Publishing
Fardiaz,S. (1992). Polusi Udara dan Air. Yogyakarta: Kanisius
Collin B. & Cann, M. (2019) Environmental Chemistry 3th Edition. New York: Freeman
John W. Moore & Elizabeth A. Moore, (1976), Environmental Chemistry, New York: Academic Press
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PLO and CO mapping

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