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:	**Chemistry Laboratory Management**
Module level, if applicable:	Undergraduate
Code:	KIP 6205
Sub-heading, if applicable:	-
Classes, if applicable:	2
Semester:	5
Module coordinator:	Sunarto, M.Si
Lecturer(s):	Dra. Regina Tutik Padmaningrum, M.Si.; Erfan Priyambodo, S.Pd.Si.,M.Si.; Dra. Susila Kristianingrum, 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. Work in the laboratory safely and to conduct appropriate performance assessments in the laboratory CO2. Master theoretical concepts regarding (1) the understanding, purpose and scope of laboratory management, (2) laboratory understanding and function, (3) laboratory design and layout, (4) tool management, (5) material management, (6) tool selection criteria, (7) work safety in a laboratory, (8) assessment of learning activities in the laboratory, (9) management of laboratory waste, (10) hazardous experimental techniques, (11) MSDS CO3. Manage laboratory equipment and materials well, calibrate and use laboratory equipment, and are skilled at preparing solutions and reagents
Content:	This course discusses the basic concepts of (1) the understanding, purpose and scope of laboratory management, (2) laboratory understanding and function, (3) laboratory design and layout, (4) tool management, (5) material management, (6) tool selection criteria, (7) work safety in a laboratory, (8) assessment of learning activities in the laboratory, (9) management of laboratory waste, (10) hazardous experimental techniques, (11) MSDS.

<table>
<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.</td><td>Assignment
Qiuz
Final Exam
Midterm Exam</td><td>Presentation / written test</td><td>20%
10%
40%
30%</td></tr>
<tr><td colspan="4">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>
Regina Tutik and Susila Kristianingrum. (2007). Diktat Kuliah Manajemen Laboratorium Kimia. Yogyakarta: FMIPA UNY.
Moran, L. And Masciangioli, T. (2010). Chemical Laboratory Safety and Security A Guide to Prudent Chemical Management. Washington DC: The National Academies Press.
National Research Council. (2010). Chemical Laboratory Safety and Security. A Guide to Prudent Chemical Management. Washington DC: The NSC.
Lehman, J.W. (2008). The Student's Lab. Companion. Laboratory Techniques for Organic Chemistry. New Jersey: Prentice Hall.
Soemanto Imamkhasani.(1990). Keselamatan Kerja dalam Laboratorium Kimia. Jakarta : Gramedia
Archenhold, et all. (1978). School Science Laboratories, A Handbook of Design Management and Organization. London : John Murray.
Everet, K. & Hughes, D. (1979). A Guide to Laboratory Design, London : Butterworths
Manufacturing Chemists Association. (1972). Guide for Safety in The Chemical Laboratory. New York : Van Nostrand Reinhold Company.
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PLO and CO mapping

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