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:	**Corrosion and Electroplating**
Module level, if applicable:	Undergraduate
Code:	KMA 6242
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	Odd
Module coordinator:	Sukisman Purtadi, M.Pd.
Lecturer(s):	Dr. Isana Supiah Yosephine Louise, 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):	Chemical Equilibrium, Molecular Dynamics
Course Outcomes	After taking this course the students are expected to be able to: CO1. demonstrate an attitude of responsibility and independence in carrying out the given tasks CO2. explain correctly about the process of forming petroleum, processing of petroleum, petroleum products, and collect information about petroleum refining products, including: avtur, premium, pertamax, pertamax dex, pertalite, diesel, biofuel, LPG, lubricating oil , grease, kerosen, and asphalt CO3. collaborate effectively in reviewing the processing and development of the petroleum processing industry, as well as the role of petroleum and petroleum products in everyday life
Content:	This course discusses about the concept of corrosion and its prevention, as well as electroplating and its uses. The concept of corrosion and its prevention include Concept of Corrosion, Basics of Corrosion, Electrochemical Corrosion, Thermodynamics of Corrosion, Corrosion Kinetics and Electrochemical Applications, Know Forms of Corrosion, Factors Affecting Corrosion, Corrosion due to Water, Atmospheric Corrosion, Corrosion in Soil and Effect of

<table>
<tr><td></td><td>Microbiology, Selection Material, Test and Design, Corrosion Risk, Cathodic Protection, Coating, Corrosion at High Temperatures. Meanwhile, electroplating and its uses include Electroplating Concepts, Electroplating Methods, Electrodics and Electro-catalysis, Electrochemical Materials, Waste, Electrochemicals, and Applications.</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 and CO3</td><td>Performance Individual and Group Assignment

Mid-term Exam
Final Exam</td><td>Observation Presentation / written assignment

Written test</td><td>15% 45%

20%
20%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
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</td></tr>
<tr><td>Forms of media:</td><td>Practicum Equipment, LCD Projector, Laptop/Computer, Learning Video, Power Point Slides</td></tr>
<tr><td>References:</td><td>Handbooks:
A. McCafferty. 2010. Introduction to Corrosion Science: Springer
B. D.H. Gabe. 1978. Principles of Metal Surface Treatment and Protection, 2nd ed. Pergamon Press: Oxford, 211pp.

Suggested Readings:
A. Lawrence. 1986. Elektroplating Engineering Hand Book. New York: Van Nostrand Rein Hold Company
B. Kanani, N. 2004. Electroplating: Basic Principles, Processes and Practice. Oxford, U.K.: Elsevier Advanced Technology
C. J.K. Dennis and T.E. 1972. Such, Nickel and Chromium Plating. London: Newnes-Butterworth.
D. Ed. R Weiner. 1977. Electroplating of Plastics 360pp., Teddington: Finishing Publications Ltd.
E. J.D. Greenwood. 1981. Hard Chrome Plating, 3rd ed., 216pp. Redhill: Portcullis Press Ltd.,</td></tr>
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PLO and CO mapping

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