



Undergraduate Programme In Physics

Module Handbook

Module Name :	<i>Korosi</i> Corrosion
Module level :	Bachelor degree/Undergraduate Programme
Course Code :	4520103109
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	7/Fourth Year
Module coordinator(s)	Dr. Z.A. Imam Supardi, M.Si
Lecturer(s):	Dr. Z.A. Imam Supardi, M.Si
Language:	<i>Bahasa Indonesia</i>
Classification within the curriculum:	Compulsory / Elective
Teaching format/class hours per week during the semester:	2 contact hours of lectures (Indonesia credit semester or sks*)
Workload :	a. Lecture: 1 x 50 minutes lectures, 1 x 60 minutes structured activity, 1 x 60 minutes individual activity, 14 weeks per semester, 39.67 total hours of lecture per semester ~ 1.59 ECTS b. Lab activity: 1x170 minutes lab activity, 14 weeks per semester 39.67 total hours of lab activity per semester ~ 1.59 ECTS Total of lecture and lab activity= 79.33 total hours per semester ~ 3.18 ECTS**
Credit Point:	2 sks (3.18 ECTS)
Requirements:	Thermodynamics Materials Science Metal Physics



MINISTRY OF EDUCATION AND CULTURE
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF PHYSICS

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 Website: <http://s1-fisika.fmipa.unesa.ac.id/>, email: s1-fisika@unesa.ac.id

Learning goals/competencies:	<ol style="list-style-type: none"> 1. Students are able to think critically and use appropriate concepts to qualitatively analyze problems or situations involving the Corrosion phenomenon 2. Students are able to use the concept of Corrosion and appropriate mathematical/computing methods to get solutions to quantitative problems in Corrosion 3. Students master the material, structure, and concept of Corrosion and its application in corrosion prevention technology 4. Students are able to implement high-level thinking processes (critical, creative, logical, and problem solving) in studying the processes and symptoms of Corrosion both inductively and deductively. 5. Students are able to use symbolic and numerical language creatively in describing the process and product of Corrosion qualitatively and quantitatively. 										
Content	<p>This lecture is carried out using the "Student Centered Learning Method" assisted by references, journals, ICT, and academic services. The scope of the lecture material includes: 1) metal corrosion in the environment: acids, bases, and high humidity, 2) metal corrosion studies using the principles: electrochemistry, thermodynamics, and kinetics, 3) measuring the amount of corrosion using Gamry equipment, 4) study several metal corrosion prevention technologies, and 5) design, implementation, and communication of independent project results related to metal corrosion. Assessment emphasis on "Performance Assessment and Project".</p>										
Attribute Soft skill:	Scientific report, public speaking, and team work										
Study/exam achievements:	<p>Students are considered to complete the course and pass if they obtain at least 40% of maximum final grade. The final grade (NA) is calculated based on the following ratio:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Assessment Components</th> <th style="text-align: center;">Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Participation</td> <td style="text-align: center;">20%</td> </tr> <tr> <td style="text-align: center;">Assignment</td> <td style="text-align: center;">30%</td> </tr> <tr> <td style="text-align: center;">Mid-semester test</td> <td style="text-align: center;">20%</td> </tr> <tr> <td style="text-align: center;">Final semester test</td> <td style="text-align: center;">30%</td> </tr> </tbody> </table>	Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%
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Learning Methods :	<ol style="list-style-type: none"> 1. Student-centered approach, 2. Lecture and discussion, 3. Laboratorium activity 4. Presentations
Form of Media:	<i>Power Point</i> slides, e-book file, and multimedia.
Literature references): (primary	<ol style="list-style-type: none"> 1. Pierre R. Roberge. 2000. Handbook of Corrosion Engineering. New York: McGraw-Hill 2. A collection of articles from various international journals that cover the field of metal corrosion and have a novelty aspect in the field of technology and prevention of metal corrosion 3. User Manual "Corrosion Measurement" Gamry
Notes:	<p>*1 sks in learning process = three periods consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</p>
	<p>**1 sks = 1,59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/Hk/Ak/2019</p>