MODULE HANDBOOK

<table>
<tr><td>Modul Name</td><td>Electrochemistry</td></tr>
<tr><td>Module Leve</td><td>Bachelor</td></tr>
<tr><td>Abbreviation, if applicable</td><td>3074112074</td></tr>
<tr><td>Sub-heading, if applicable</td><td>-</td></tr>
<tr><td>Course included in the module, if applicable</td><td>-</td></tr>
<tr><td>Semester/term</td><td>4th/ second year</td></tr>
<tr><td>Module coordinator(s)</td><td>Dr. I Gusti Made Sanjaya, M.Si.</td></tr>
<tr><td>Lecturer(s)</td><td>Dr. I Gusti Made Sanjaya, M.Si. and Samik, S.Si., M.Si.</td></tr>
<tr><td>Language</td><td>Indonesian Language</td></tr>
<tr><td>Classification within the curriculum</td><td>Elective Course</td></tr>
<tr><td>Teaching format/class hours per week during the semester</td><td>2 hours lectures (50 min / hour)</td></tr>
<tr><td>Workload</td><td>2 x 50 minutes lectures, 2 x 60 minutes structured activity,
2 x 60 minutes individual activity, 14 weeks per semester,
79.33 total hours per semester ~ 3.18 ECTS**</td></tr>
<tr><td>Credit point</td><td>2 CU x 1.59 = 3.18 ECTS</td></tr>
<tr><td>Prerequisite course(s)</td><td>-</td></tr>
<tr><td>Learning Outcomes</td><td>General Competence (knowledge):
Student can conclude the electrical properties of chemicals, their measurements, and their application in the development of alternative energy.

Spesific Competence:
Students can take advantage of the electrical properties of chemicals to develop alternative energy</td></tr>
<tr><td>Content</td><td>Course materials examine the electrical properties of chemicals and their measurements, as well as their application in the development
of alternative energy.</td></tr>
<tr><td>Attribute Soft skill:</td><td>Active communication; Disipline; Collaboration; Responsibility; and Argumentation in class</td></tr>
<tr><td>Study/exam achievements</td><td>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:
<table>
<tr><td>Assessment Components</td><td>Percentage of contribution</td></tr>
<tr><td>Participation</td><td>20%</td></tr>
<tr><td>Assignment</td><td>30%</td></tr>
<tr><td>Mid-semester test</td><td>20%</td></tr>
<tr><td>Final semester test</td><td>30%</td></tr>
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Media	Internet, Computer, LCD, White board
Learning Methods	Lectures, discussion, problem solving, project-based learning, and assignment
Literature	1. Bard, A.J. and Faulkner, L.R. 2001. *Electrochemical Methods Fundamental and Applications*. USA: John Wiley & Sons, Inc. 2. Kulikovsky, A.A. 2010. *Analytical Modelling of Fuel Cells*. Amsterdam: Elsevier. 3. Jha , A.R. 2010. *Solar Cell Technology and Applications*. USA: Taylor and Francis Group, LLC
Notes:	*1 CU 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.
	**1 CU = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/Hk/Ak/2019