

## MODULE HANDBOOK

Module Name	Chemical Kinetics					
Module Level	Bachelor					
Abbreviation, if applicable	8420403135					
Sub-heading, if applicable	-					
Course included in the module, if applicable	-					
Semester/term	5 <sup>th</sup> /Third year					
Module coordinator(s)	Prof. Dr. Suyono, M.Pd.					
Lecturer(s)	Bertha Yonata, M.Pd.					
Language	Indonesian					
Classification within the curriculum	Compulsory					
Teaching format/class hours per week during the semester	3 hours lectures (50 min/hour)					
Workload	3 x 50 minutes lectures, 3 x 60 minutes structured activity, 3 x 60 minutes individual activity, 14 weeks per semester, 119 total hours per semester ~ 4.77 ECTS**					
Credit Point	3 CU = 3 x 1.59 = 4.77 ECTS					
Prerequisite Course(s)	Quantum Chemistry					
Learning Outcome	<p>Students have the ability to communicate the results of experiments so they are able to develop a conceptual framework for formulating actions or alternative actions in solving chemical problems in life.</p> <p>Students skillfully use tools in determining reaction rates and reaction mechanisms based on empirical facts (inductive dimensions) and submit theoretical arguments to explore empirical facts that occur (deductive dimensions) in the field of reaction kinetics.</p> <p>Students have knowledge of the laws of reaction rates and reaction mechanisms based on empirical facts (inductive dimensions) and submit theoretical arguments to explore empirical facts that occur (deductive dimensions) in the field of reaction kinetics.</p> <p>Students have the ability to cooperate and are responsible for assessing the rate of reaction as a function of concentration, temperature, and catalyst as well as the legal interpretation of the reaction rate to the discussion and design of reaction mechanisms (including photochemical).</p>					
Content	Empirical and theoretical studies of reaction rates as a function of concentration, temperature and catalysts and the interpretation of the reaction rate laws to the discussion and design of reaction mechanisms (including photochemical).					
Study/Exam Achievement	<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: left;">Assessment Components</th> <th style="text-align: left;">Percentage of contribution</th> </tr> </thead> <tbody> <tr> <td>Participation</td> <td style="text-align: center;">20%</td> </tr> </tbody> </table>		Assessment Components	Percentage of contribution	Participation	20%
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Participation	20%					

	Assignment	30%
	Mid-semester test	20%
	Final semester test	30%
Media	Computer, LCD, White board, laboratory instruments	
Learning Methods	Lectures, discussion, assignment, laboratory activity	
Literature	<p>Wilkinson, Frank. 1936. <i>Chemical Kinetics and Reaction Mechanisms</i>. Victoria: Van Nostrand Reinhold Company.</p> <p>Atkins, P. W. 1995. <i>Physical Chemistry</i>. Third Edition. New York: W. H. Freeman and Company.</p> <p>Castelan, Gilbert W. 1983. <i>Physical Chemistry</i>. Third Edition. Tokyo: Addison-Wesley Publishing Company.</p>	
Notes:	<p>*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.</p> <p>**1 CU = 1,59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/Hk/Ak/2019</p>	