

MODULE HANDBOOK

Module Name	Philosophy of Science
Module level	Bachelor
Abbreviation, if applicable	3074212025
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	3 rd / Second year
Module coordinator(s)	Samik, S.Si., M.Si
Lecturer(s)	Prof. Dr. Suyono, M.Pd. Prof. Dr. Harun Nasrudin, M.S.
Language	Indonesian
Classification within the curriculum	Compulsory Course
Teaching format/class hours per week during the semester:	2 hours lecturers (50 min per hours)
Workload:	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**
Credit points:	2 CU x 1.59 = 3.18 ECTS
Prerequisite course(s):	-
Targeted learning outcomes:	<ol style="list-style-type: none"> 1. Able to apply logical, critical, systematic and innovative thinking in the context of developing or implementing science (natural science, especially chemistry). 2. Able to reason correctly and comprehensively (deep and broad) in gaining scientific understanding. 3. Have knowledge in defining natural sciences comprehensively, classifying scientific products, building concepts, understanding scientific methods, distinguishing schools of thought in science, developing syllogisms, and demonstrating the role of tools of science in the development of science. 4. Realizing the weaknesses of science and realizing the greatness of Allah so that he is wise in developing and applying knowledge.
Content:	A study of three scientific components (scientific product, scientific method, & scientific attitude) including the tools of science (language, logic, mathematics, and statistics), three scientific questions (ontology, epistemology, & axiology), thoughts and ways of thinking of philosophers that can be ratified in chemistry learning and/or chemistry studies which are directed to the final target of a policy in thinking and strengthening faith (God is Great and Merciful while humans

	are weak creatures who must always try to improve themselves and the environment). This study was conducted through lectures, discussions, practices, presentations, and chapter reports.										
Study / exam achievements:	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 border="1"> <thead> <tr> <th>Assessment Components</th> <th>Percentage of contribution</th> </tr> </thead> <tbody> <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> </tbody> </table>	Assessment Components	Percentage of contribution	Participation	20%	Assignment	30%	Mid-semester test	20%	Final semester test	30%
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	Participation	20%									
	Assignment	30%									
Mid-semester test	20%										
Final semester test	30%										
Media:	Computer, LCD, White board, internet										
Learning Methods	Lectures, individuals assignment, group assignment, discussion, and presentation										
Literature:	<ol style="list-style-type: none"> 1. Basic Education Materials for Teaching Deed Program V. 1985. Book IA Philosophy of Science. Jakarta: Ministry of Education and Culture, Open University. 2. Dude, Mario. 2007. Philosophy of Science from Explanation to Justification. London: Transaction Publishers. 3. McLelland, Christine V. 2006. The Nature of Science and The Scientific Method. USA: The Geological Society of America. 4. Dane, FC 2010. Evaluating Research: Methodology for People Who Need to Read Research (Chapter 2: The Scientific Approach) . California: SAGE Publications, Inc. 5. Herron, JD et al. 1977. Problems Associated with Concept Analysis. Science Education 61(2). P. 185-199 6. Camarinha, LM & Matos. (without year). Scientific Research, Methodologies and Techniques. cam@uninova.pt 										
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										