MODULE HANDBOOK

Modul Name	Philosophy of Science
Module Level	Bachelor
Abbreviation,if applicable	3074212025
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	7th/Fourth Year
Modul coordinator(s)	Prof. Dr. Sari Edi C, M.Si., ; Dr. Nuniek Herdyastuti, M.Si
Lecturer(s)	Prof. Dr. Suyono, M.Pd. ; Dr. Harun Nasrudin, M.S., ; Samik, S.Si., M.Si
Language	Bahasa Indonesia
Classification within the curriculum	Elective Course
Teaching format/class hours per week during the semester	2 hours lectures (50 min / hour)
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 point	2 CU = 2 x 1.59 = 3.18 ECTS
Prerequisite Course(s)	-
Learning Outcomes	**General Competence (knowledge)**: Students are able to apply logical, critical, systematic and innovative thinking in the context of the development or implementation of natural science, especially chemistry **Specific Competence** : At the end of the lecture, students are able to correct and comprehensive reasoning in gaining an understanding of science and students have knowledge in defining natural science comprehensively, classifying scientific products, developing concepts, understanding scientific methods, distinguishing the flow of thinking in science, developing syllogism, and showing the role of tools of science in the development of science.
Content	The study of the flow of thinking in science, philosophical questions of science (ontology, epistemology, and axiology), the role of science tools, and scientific components (scientific products, scientific methods, and scientific attitudes) in the field of Natural Sciences especially chemistry and its implementation in religious life. This study is carried out 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:

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<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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<tr><td>Forms of media</td><td>Computer, LCD, White board</td></tr>
<tr><td>Learning Methods</td><td>Lectures, discussion, assignment and chapter report</td></tr>
<tr><td>Literatur</td><td>

Materi Dasar Pendidikan Program Akta Mengajar V. 1985. Buku IA Filsafat Ilmu. Jakarta: Departemen Pendidikan dan Kebudayaan, Universitas Terbuka.
Bunge, Mario. 2007. Philosophy of Science from Explanation to Justification. London: Transaction Publishers.
McLelland, Christine V. 2006. The Nature of Science and The Scientific Method. USA: The Geological Society of America.
Dane, F.C. 2010. Evaluating Research: Methodology for People Who Need to Read Research (Chapter 2: The Scientific Approach). California: SAGE Publication, Inc.
Herron, J.D. et al. 1977. Problems Associated with Concept Analysis. Science Education 61(2). P. 185-199
Camarinha, L. M. & Matos. (tanpa tahun). Scientific Research, Methodologies and Techniques. cam@uninova.pt
The Scientific Approach in Education

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<tr><td rowspan="2">Notes:</td><td>*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.</td></tr>
<tr><td>**1 CU = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/Un38/Hk/Ak/2019</td></tr>
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