



Universitas Negeri Surabaya
Faculty of Education, Master of Education
Education Management Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date																																																																			
Science philosophy	8610402088	Compulsory Study Program Subjects	T=2 P=0 ECTS=4.48	1	July 17, 2024																																																																			
AUTHORIZATION	SP Developer		Course Cluster Coordinator	Study Program Coordinator																																																																				
	Dr. Amrozi Khamidi, S.Pd., M.Pd.																																																																				
Learning model	Case Studies																																																																							
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																																																							
	PLO-5	Able to Manifest the Character "Intelligent, Religious, Noble Character, Independent, Caring, Academic Ethics and Resilient in the Field of Work, Daily Behavior in Society and State																																																																						
	PLO-7	Able to document, store, secure and recover research data in order to ensure validity and prevent plagiarism as well as communicate through the media to the academic community and the wider community																																																																						
	PLO-9	Able to manage learning at all types and levels of education and demonstrate professional performance and be responsible for work in the field of education management independently																																																																						
	PLO-10	Able to apply concepts, theories and practices of educational leadership, educational management, educational organizations, educational supervision using research methods, statistical concepts in various interdisciplinary and multidisciplinary environmental conditions																																																																						
	Program Objectives (PO)																																																																							
	PO - 1	Students are able to develop knowledge through the process of abstracting the scope of the philosophy of science to produce innovative and tested work																																																																						
	PO - 2	Students are expected to gain an understanding of philosophy and science, the history of the development of science, understand what philosophy and science are, understand truth in science, understand the basics of science in philosophy, and study the philosophy of science in the aspects of ontology, epistemology and axiology.																																																																						
	PLO-PO Matrix																																																																							
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>P.O</td> <td>PLO-5</td> <td>PLO-7</td> <td>PLO-9</td> <td>PLO-10</td> </tr> <tr> <td>PO-1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>PO-2</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					P.O	PLO-5	PLO-7	PLO-9	PLO-10	PO-1					PO-2																																																							
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PO Matrix at the end of each learning stage (Sub-PO)																																																																								
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PO-1																																																																								
PO-2																																																																								
Short Course Description	- Basic and deep-rooted understanding of the conception of science, mapping of science, knowledge and truth, neutrality, benefits and impact of science on life. It also examines the meaning, implications and implementation of philosophy of science for scientific and educational development with an emphasis on issues of logic and scientific methodology.																																																																							
References	Main :																																																																							
	<ol style="list-style-type: none"> 1. Pramono, Made, dkk, 2005, Filsafat Ilmu (Kajian Ontologi, Epistemologi, dan Aksiologi) , Unesa Unipress, Surabaya. 2. Pramono, Made, E-learning Filsafat Ilmu : http://elearning.unesa.ac.id Kuipers, Theo A.F., (ed.), 2007, Handbook o f The Philosophy o f Science: General Philosophy o f Science - Focal Issues , Elsevier BV, Netherlands: Endraswara, 3. Suwardi, 2012, Filsafat Ilmu: Konsep, Sejarah, dan Pengembangan Metode Ilmiah , Yogyakarta: CAPS. 4. Prawironegoro, Darsono, 2010, Filsafat Ilmu: Kajian tentang Pengetahuan yang Disusun Secara Sistematis dan Sistemik dalam Membangun Ilmu Pengetahuan , Jakarta: Nusantara Consulting. 5. Kebung, Kohnard. 2011. Filsafat Ilmu Suatu Pengantar. Surajiyo, 2013. Filsafat Ilmu dan perkembangannya di Indonesia. Bumi Aksara, Jakarta. 																																																																							
	Supporters:																																																																							
Supporting lecturer	Prof. Dr. Maria Veronika Roesminingsih, M.Pd. Dr. Amrozi Khamidi, S.Pd., M.Pd.																																																																							

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (offline)	Online (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Understand the concept of: Philosophy of Science	Understand the basic differences regarding the concepts: 1. Philosophy, Science and Philosophy of Science 2. The meaning and benefits of studying the philosophy of science 3. Types of scope of knowledge (knowledge)	<p>Criteria: Students are considered capable of understanding if they have mastered 80%</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	presentations, lectures, questions and answers, Case-based Learning 3x 50	presentation, lecture, question and answer, case based learning 3x50	<p>Material: . Concepts of philosophy, science and philosophy of science 2. Characteristics of philosophical thinking 4. Meaning and benefits of studying philosophy of science 5. Basic differences between philosophy, science, art and other knowledge (mysticism, religion, etc.)</p> <p>References: Pramono, Made, et al, 2005, <i>Philosophy of Science (Study of Ontology, Epistemology and Axiology)</i>, Unesa Unipress, Surabaya.</p>	5%
2	Understand the concept of: Philosophy of Science	Understand the basic differences regarding the concepts: 1. Philosophy, Science and Philosophy of Science 2. The meaning and benefits of studying the philosophy of science 3. Types of scope of knowledge (knowledge)	<p>Criteria: Students are considered capable of understanding if they have mastered 80%</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	presentations, lectures, questions and answers, Case-based Learning 3x 50	presentation, lecture, question and answer, case based learning 3x50	<p>Material: . Concepts of philosophy, science and philosophy of science 2. Characteristics of philosophical thinking 4. Meaning and benefits of studying philosophy of science 5. Basic differences between philosophy, science, art and other knowledge (mysticism, religion, etc.)</p> <p>References: Pramono, Made, et al, 2005, <i>Philosophy of Science (Study of Ontology, Epistemology and Axiology)</i>, Unesa Unipress, Surabaya.</p>	5%
3	Understand the concept of: Philosophy of Science	Understand the concepts of axiology, epistemology, and axiology of science	<p>Criteria: Students are considered capable of understanding if they have mastered 80%</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	presentations, lectures, questions and answers, Case-based Learning 3x 50	presentation, lecture, question and answer, case based learning 3x50	<p>Material: . Concepts of philosophy, science and philosophy of science 2. Characteristics of philosophical thinking 4. Meaning and benefits of studying philosophy of science 5. Basic differences between philosophy, science, art and other knowledge (mysticism, religion, etc.)</p> <p>References: Pramono, Made, et al, 2005, <i>Philosophy of Science (Study of Ontology, Epistemology and Axiology)</i>, Unesa Unipress, Surabaya.</p> <hr/> <p>Material: 1. The nature of ontology, and the difference between science and other knowledge 2. The essence of science epistemology, the structure and procedures for compiling scientific knowledge 3. The contribution of science in improving the quality of human life</p> <p>Reference: Suwardi, 2012, <i>Philosophy of Science: Concept, History and Development of Scientific Methods</i>, Yogyakarta: CAPS.</p>	5%

4	Understand the concept of: Philosophy of Science	Understand the concepts of axiology, epistemology, and axiology of science	<p>Criteria: Students are considered capable of understanding if they have mastered 80%</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	presentations, lectures, questions and answers, Case-based Learning 3x 50	presentation, lecture, question and answer, case based learning 3x50	<p>Material: . Concepts of philosophy, science and philosophy of science 2. Characteristics of philosophical thinking 4. Meaning and benefits of studying philosophy of science 5. Basic differences between philosophy, science, art and other knowledge (mysticism, religion, etc.) References: <i>Pramono, Made, et al, 2005, Philosophy of Science (Study of Ontology, Epistemology and Axiology), Unesa Unipress, Surabaya.</i></p> <hr/> <p>Material: 1. The nature of ontology, and the difference between science and other knowledge 2. The essence of science epistemology, the structure and procedures for compiling scientific knowledge 3. The contribution of science in improving the quality of human life Reference: <i>Suardi, 2012, Philosophy of Science: Concept, History and Development of Scientific Methods, Yogyakarta: CAPS.</i></p>	5%
5	Have the ability to think logically and analytically	Understand the concepts of axiology, epistemology, and axiology of science	<p>Criteria: Students are considered capable of understanding if they have mastered 80%</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	presentations, lectures, questions and answers, Case-based Learning 3x 50	presentation, lecture, question and answer, case based learning 3x50	<p>Material: . Concepts of philosophy, science and philosophy of science 2. Characteristics of philosophical thinking 4. Meaning and benefits of studying philosophy of science 5. Basic differences between philosophy, science, art and other knowledge (mysticism, religion, etc.) References: <i>Pramono, Made, et al, 2005, Philosophy of Science (Study of Ontology, Epistemology and Axiology), Unesa Unipress, Surabaya.</i></p> <hr/> <p>Material: 1. The nature of ontology, and the difference between science and other knowledge 2. The essence of science epistemology, the structure and procedures for compiling scientific knowledge 3. The contribution of science in improving the quality of human life Reference: <i>Suardi, 2012, Philosophy of Science: Concept, History and Development of Scientific Methods, Yogyakarta: CAPS.</i></p> <hr/> <p>Material: 1. Definition of reasoning 2. Difference between reasoning and other thinking 3. Characteristics of reasoning 4. Definition of logic 5. Types of logic References: <i>Prawironegoro, Darsono, 2010, Philosophy of Science: Study of Knowledge Organized Systematically and Systemically in Building Science Knowledge, Jakarta: Nusantara Consulting.</i></p>	5%

6	Implementing various sources of knowledge proportionally	Understanding the level of development of human knowledge, various types of sources of knowledge, sources of knowledge that can be used as a basis for constructing scientific knowledge (Science)	<p>Criteria: Students are considered capable of understanding if they have mastered 80%</p> <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance</p>	presentations, lectures, questions and answers, Case-based Learning 3x 50	presentation, lecture, question and answer, case based learning 3x50	<p>Material: . Stages of development of human knowledge 2. Sources of knowledge (rational, empirical, intuition, and revelation) 3. Characteristics of each source of knowledge 4. Sources of knowledge 5. which are based on rationality and experience (empirical) as human foundations Library: <i>Pramono, Made, E-learning Philosophy of Science: http://elearning.unesa.ac.id/... Kuipers, Theo AF, (ed.), 2007, Handbook of The Philosophy of Science: General Philosophy of Science - Focal Issues, Elsevier BV, Netherlands. Endraswara,</i></p>	7%
7	Applying the concepts of truth criteria of coherence, correspondence and pragmatism in compiling a thesis	Understand the concept and criteria of truth coherence, the concept and criteria of truth correspondence, the concept and criteria of pragmatic truth, and the implications of the three concepts of truth criteria in the preparation of scientific work	<p>Criteria: Students are considered capable of understanding if they have mastered 80%</p> <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance</p>	presentations, lectures, questions and answers, Case-based Learning 3x 50	presentation, lecture, question and answer, case based learning 3x50	<p>Material: . Understanding the concept of coherence truth criteria 2. Understanding the concept of correspondence truth criteria 3. Understanding the concept of pragmatic truth criteria 4. Benefits of the concept of the three truth criteria in preparing scientific work Library: <i>Pramono, Made, E-learning Philosophy of Science: http://elearning.unesa.ac.id/... Kuipers, Theo AF, (ed.), 2007, Handbook of The Philosophy of Science: General Philosophy of Science - Focal Issues, Elsevier BV, Netherlands. Endraswara,</i></p>	7%
8	master the material from meetings 1 to 7	able to apply philosophical foundations and solve social problems from a philosophical perspective	<p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	test activities, doing 3x 50 independent assignments	subjective test activities, doing independent assignments a week	<p>Material: ability to apply problem solving from a philosophical perspective. Reference: <i>Pramono, Made, et al, 2005, Philosophy of Science (Study of Ontology, Epistemology and Axiology), Unesa Unipress, Surabaya.</i></p>	20%
9	Implement scientific methods and procedures in preparing a thesis	Understand quantitative and qualitative research paradigms, the nature of scientific structures and methods, and the steps and procedures carried out in constructing scientific knowledge	<p>Criteria: Students will be considered to understand if 80% of the answers are correct</p> <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	test activities, doing 3x 50 independent assignments	subjective test activities, doing independent assignments a week	<p>Material: ability to apply problem solving from a philosophical perspective. Reference: <i>Pramono, Made, et al, 2005, Philosophy of Science (Study of Ontology, Epistemology and Axiology), Unesa Unipress, Surabaya.</i></p> <p>Material: 1. The nature of quantitative and qualitative research paradigms 2. The nature of the structure of scientific knowledge and scientific methods 3. Steps and procedures for implementing scientific methods References: <i>Prawironegoro, Darsono, 2010, Philosophy of Science: Study of Knowledge Organized Systematically and Systemically in Building Knowledge, Jakarta: Nusantara Consulting.</i></p>	4%
10	Applying mathematical, language and statistical concepts as a means of scientific thinking	Understand the function of language as a means of scientific thinking, the function of mathematics as a means of scientific thinking, and the function of statistics as a means of scientific thinking	<p>Criteria: Students will be considered to understand if 80% of the answers are correct</p> <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	test activities, doing 3x 50 independent assignments	subjective test activities, doing independent assignments a week	<p>Material: 1. The essence of language as a means of scientific thinking 2. The essence of mathematics as a means of scientific thinking using deductive reasoning patterns 3. The essence of statistics as a means of scientific thinking using inductive reasoning patterns Reference: <i>Prawironegoro, Darsono, 2010, Philosophy of Science: The Study of Knowledge Arranged Systematically and Systemically in Building Knowledge, Jakarta: Nusantara Consulting.</i></p>	4%

11	Understand the relationship between the role of science and morals	Understand proportionally the relationship between the role of science to improve the benefit of humanity within the moral framework of humanity	<p>Criteria: Students will be considered to understand if 80% of the answers are correct</p> <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	test activities, doing 3x 50 independent assignments	subjective test activities, doing independent assignments a week	<p>Material: 1. The constructive and destructive impact of science and technology 2. The position of science which is value-free and pro-humanity 3. The relationship between science and its development with the moral concept of humanity</p> <p>Library: Pramono, Made, <i>E-learning Philosophy of Science</i> : http://elearning.unesa.ac.id/... Kuipers, Theo AF, (ed.), 2007, <i>Handbook of The Philosophy of Science: General Philosophy of Science - Focal Issues</i>, Elsevier BV, Netherlands. Endraswara,</p>	4%
12	Understand the relationship between the role of science and morals	Understand proportionally the relationship between the role of science to improve the benefit of humanity within the moral framework of humanity	<p>Criteria: Students will be considered to understand if 80% of the answers are correct</p> <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests</p>	test activities, doing 3x 50 independent assignments	subjective test activities, doing independent assignments a week	<p>Material: 1. The constructive and destructive impact of science and technology 2. The position of science which is value-free and pro-humanity 3. The relationship between science and its development with the moral concept of humanity</p> <p>Library: Pramono, Made, <i>E-learning Philosophy of Science</i> : http://elearning.unesa.ac.id/... Kuipers, Theo AF, (ed.), 2007, <i>Handbook of The Philosophy of Science: General Philosophy of Science - Focal Issues</i>, Elsevier BV, Netherlands. Endraswara,</p>	4%
13	Understand the concept of social responsibility of scientists and be able to implement it in life	Understand the meaning of social responsibility of scientists and have an attitude as a scientist who has social responsibility	<p>Criteria: Students will be considered to understand if 80% of the answers are correct</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	test activities, doing 3x 50 independent assignments	subjective test activities, doing independent assignments a week	<p>Material: 1. The role and social responsibilities of scientists in the realm of scientific ontology, epistemology and axiology 2. Case study of the impact of science and technology in human life</p> <p>Reference: Pramono, Made, et al, 2005, <i>Philosophy of Science (Study of Ontology, Epistemology and Axiology)</i>, Unesa Unipress, Surabaya.</p>	4%
14	Implementing the structure of scientific knowledge in the process of creating scientific work	Understand the principles and procedures of scientific research, as well as the technical steps and procedures for preparing scientific work	<p>Criteria: Students will be considered to understand if 80% of the answers are correct</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	test activities, doing 3x 50 independent assignments	Subjective test activities, doing 3x50 independent assignments	<p>Material: 1. Steps in scientific research starting from posing a problem to drawing conclusions 2. Scientific notation techniques (use of ibid, op.cit, loc.cit in footnotes and writing bibliography.</p> <p>Reference: Pramono, Made, et al, 2005, <i>Philosophy of Science (Study of Ontology, Epistemology and Axiology)</i>, Unesa Unipress, Surabaya.</p>	4%
15	Implementing the structure of scientific knowledge in the process of creating scientific work	Understand the principles and procedures of scientific research, as well as the technical steps and procedures for preparing scientific work	<p>Criteria: Students will be considered to understand if 80% of the answers are correct</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	test activities, doing 3x 50 independent assignments	Subjective test activities, doing 3x50 independent assignments	<p>Material: 1. Steps in scientific research starting from posing a problem to drawing conclusions 2. Scientific notation techniques (use of ibid, op.cit, loc.cit in footnotes and writing bibliography.</p> <p>Reference: Pramono, Made, et al, 2005, <i>Philosophy of Science (Study of Ontology, Epistemology and Axiology)</i>, Unesa Unipress, Surabaya.</p>	4%
16	understand meetings 1 to 15		<p>Criteria: Students will be considered to have understood if 80% of them answered correctly</p> <p>Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practice / Performance, Tests</p>	written test 3x50	written test a week	<p>Material: all material from meetings 1 to 15</p> <p>References: Pramono, Made, et al, 2005, <i>Philosophy of Science (Study of Ontology, Epistemology and Axiology)</i>, Unesa Unipress, Surabaya.</p>	13%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	38.4%
2.	Project Results Assessment / Product Assessment	38.4%
3.	Practice / Performance	7.91%
4.	Test	15.24%
		99.95%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.