

Short Course Description	Examining the nature of mathematics with various views on mathematics, the truth and characteristics of mathematics, beliefs, aesthetics of mathematics, and the nature of education with various views and the position of mathematics in learning theory, and basic principles in learning and teaching mathematics.						
References	Main :		<ol style="list-style-type: none"> 1. Siswono, T. 2014. Filsafat Pendidikan Matematika dan Sejarah Matematika. Modul PLPG UNESA 2. FitzSimmons, J. A. 2014. Philosophy of Teaching and Learning Mathematics. http://plato.wilmington.edu/faculty/jfitzs/tchg_phi.htm. 3. Ernest, P. Tanpa tahun. What is the Philosophy of Mathematics Education. http://people.exeter.ac.uk/PErnest/pome18/PhoM_%20for_ICME_04.htm 4. Ernest, P. 1991. The Philosophy of Mathematics Education, London: Falmer Press. 				
	Supporters:		<ol style="list-style-type: none"> 1. Philosophy of Mathematics Education Journal ISSN 1465-2978 (Online) 2. Soedjadi, R. 1999. Kiat-Kiat Pendidikan Matematika. Dirjen Dikti, Depdikbud 				
	Supporting lecturer		Prof. Dr. Mega Teguh Budiarto, M. Pd. Prof. Dr. Tatag Yuli Eko Siswono, 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	Describe the meaning of the Philosophy of Mathematics Education.	Analyzing the meaning of the Philosophy of Mathematics Education	Criteria: Answer Accuracy Form of Assessment : Participatory Activities	Face to face, Discussion, Question and answer 2 x 50'	Live (Zoom meeting), Discussion, Question and answer 2 x 50'	Material: Understanding the Philosophy of Mathematics Education Reference: <i>Siswono, T. 2014. Philosophy of Mathematics Education and History of Mathematics. UNESA PLPG Module</i>	3%
2	Analyzing the role of Mathematics Education Philosophy in learning and teaching.	Describe the role of Mathematics Education Philosophy in learning and teaching	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2 x 50'	Live (Zoom meeting), Discussion, Q&A. Case 1: Is there a contribution from philosophy? 2 x 50'	Material: The role of Mathematics Education Philosophy in learning and teaching Reference: <i>Siswono, T. 2014. Philosophy of Mathematics Education and History of Mathematics. UNESA PLPG Module</i>	3%
3	Describe various epistemological educational philosophies and their relationship to Mathematics by analyzing a case.	Comparing idealism and realism.	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer. 2 x 50'	Live (Zoom meeting), Discussion, Q&A. Case 2: Realism or Idealism? 2 x 50'	Material: Realism and Idealism References: <i>FitzSimmons, James A. 2014. Philosophy of Teaching and Learning Mathematics. http://plato.wilmington.edu/...</i>	4%
4		Comparing essentialism and existentialism	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Case 3: Can everyone learn mathematics in various ways? 2x50'	Material: Essentialism and existentialism References: <i>FitzSimmons, James A. 2014. Philosophy of Teaching and Learning Mathematics. http://plato.wilmington.edu/...</i>	4%
5		Comparing social reconstructionism and progressivism	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Case 4: What philosophical view is held? 2x50'	Material: Social reconstructionism and progressivism References: <i>FitzSimmons, James A. 2014. Philosophy of Teaching and Learning Mathematics. http://plato.wilmington.edu/...</i>	4%
6		Comparing pragmatism and perennialism in mathematics education.	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Case 5: What are the philosophical aspects of online learning? 2x50'	Material: Pragmatism and perennialism in mathematics education. References: <i>FitzSimmons, James A. 2014. Philosophy of Teaching and Learning Mathematics. http://plato.wilmington.edu/...</i> Material: Pragmatism and perennialism in mathematics education. Bibliography: <i>Philosophy of Mathematics Education Journal ISSN 1465-2978 (Online)</i>	3%

7	Analyzing various epistemological philosophies of Mathematics and their relationship to education by analyzing a case.	Compare logicalism and formalism	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Case 6: Is mathematical logic necessarily true? 2x50'	Material: Logicism and formalism Reference: Siswono, T. 2014. <i>Philosophy of Mathematics Education and History of Mathematics</i> . UNESA PLPG Module Material: Logicism and formalism Bibliography: Ernest, P. 1991. <i>The Philosophy of Mathematics Education</i> , London: Falmer Press.	4%
8		Midterm exam	Criteria: Answer Accuracy	Midterm Exam 2x50'			20%
9		Compare logicalism, formalism, and intuitionism	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Case 7: Do numbers exist or were they created to exist? 2x50'	Material: Logicism, formalism, and intuitionism References: Ernest, P. 1991. <i>The Philosophy of Mathematics Education</i> , London: Falmer Press.	3%
10	Evaluate mathematical aesthetics by analyzing a case.	Describe the aesthetics of mathematics by analyzing a case.	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Case 8: Isn't it crazy to say mathematics is beautiful? 2x50'	Material: Mathematical aesthetics by analyzing a case References: FitzSimmons, James A. 2014. <i>Philosophy of Teaching and Learning Mathematics</i> . http://plato.wilmington.edu/...	3%
11	Analyzing the epistemological relationship between mathematics and learning theory based on a case.	Describe the epistemological relationship between mathematics and learning theory based on a case.	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. 2x50'	Material: Mathematical epistemology and learning theory based on a case Reference: Siswono, T. 2014. <i>Philosophy of Mathematics Education and History of Mathematics</i> . UNESA PLPG Module	3%
12	Designing project assignments regarding the analysis of a mathematics education problem collaboratively and/or independently in written form.	Create a project assignment design regarding the analysis of a mathematics education problem collaboratively and/or independently in written form	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. 2x50'	Material: Project assignment design regarding analysis of a problem Mathematics education Reference: FitzSimmons, James A. 2014. <i>Philosophy of Teaching and Learning Mathematics</i> . http://plato.wilmington.edu/...	4%
13		Create a project assignment design regarding the analysis of a mathematics education problem collaboratively and/or independently in written form.	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Assignment 8: Philosophical Analysis of 2x50' Prototype Curriculum	Material: Project assignment design regarding the analysis of an educational problem. Reference: FitzSimmons, James A. 2014. <i>Philosophy of Teaching and Learning Mathematics</i> . http://plato.wilmington.edu/...	4%
14		Create a project assignment design regarding the analysis of a mathematics education problem collaboratively and/or independently in written form.	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Assignment: Philosophical Analysis of 2x50' Prototype Curriculum	Material: Project assignment design regarding analysis of a problem Mathematics education Reference: FitzSimmons, James A. 2014. <i>Philosophy of Teaching and Learning Mathematics</i> . http://plato.wilmington.edu/...	4%
15	Complete project assignments regarding the analysis of a mathematics education problem collaboratively and/or independently by paying attention to academic ethics.	Presenting project assignments regarding the analysis of a mathematics education problem collaboratively and/or independently by paying attention to academic ethics.	Criteria: Suitability and accuracy of case solutions, depth of understanding of cases, critical thinking and analytical skills, creativity in problem solving	Face to face, Discussion, Question and answer 2x50'	Live (Zoom meeting), Discussion, Q&A. Assignment: Presentation of project assignments on the analysis of a problem Mathematics education 2x50'	Material: Project assignment on analysis of a problem Mathematics education Reference: FitzSimmons, James A. 2014. <i>Philosophy of Teaching and Learning Mathematics</i> . http://plato.wilmington.edu/...	4%
16		Final Semester Examination (UAS)-Project for Preparing Analysis of Mathematics Education Problems		Project Report Preparing Analysis of Mathematics Education Problems 2x50'			30%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	3%
		3%

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** ability in the process and student learning outcomes are specific and measurable statements that identify the ability 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.