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### Module Handbook

Module Name :	<i>Filosofi Matematika</i> Philosophy of Mathematics
Module level :	Bachelor degree/Undergraduate Program
Course Code :	4420102033
Abbreviation, if applicable:	-
Courses included in the module, if applicable:	Not Applicable
Semester/Term	6 <sup>th</sup> / third year
Module coordinator(s)	Dr. Yusuf Fuad, M.App.Sc.
Lecturer(s):	Dr. Yusuf Fuad, M.App.Sc. Prof. Dr. Tatag Yuli Eko Siswono, M.Pd.
Language:	Bahasa Indonesia (Indonesian Language)
Classification within the curriculum:	<del>Compulsory</del> / Elective
Teaching format/class hours per week during the semester:	2 contact hours of lectures ( <i>sks</i> or credit unit*)
Workload :	2 x 50 minutes lectures, 2 x 60 minutes structured activity, and 2 x 60 minutes individual activity per week, 14 weeks per semester 79.33 total hours per semester ~ 3.18 ECTS**
Credit Unit:	2 credit unit (3.18 ECTS)
Requirements:	None



<p>Learning goals/competencies:</p>	<p><b>KNOWLEDGE (KNO-1):</b> Demonstrating mathematical knowledge and mathematical insight.</p> <p>CLO-1: Able to explain the basic understanding of structured thinking, reasoning, and rational-deductive patterns.</p> <p>CLO-2: Able to explain the term of philosophy, the philosophy of mathematics, along with the four schools of philosophy and their influences.</p> <p>CLO-3: Able to explain of philosophy of mathematics focuses on aspects of ontology, epistemology, and axiology.</p> <p>CLO-4: Able to explain of the nature of mathematics, mathematical objects, and deductive-axiomatic spiral-spatial systems, as well as the nature of truth.</p> <p>CLO-5: Able to explain of about the Platonic school of thought, the formalism of thought, logicism of thought, and the intuitionist school of thought, and their development.</p> <p><b>ATTITUDE AND SOCIAL (SOC-1) :</b> Working collaboratively and having social sensitivity (obligations as citizens and towards religion) and being able to bring change to a technopreneurship community.</p> <p>CLO-6: Students have mathematical attitudes and responsibilities in applying modern mathematical philosophy and contemporary mathematical philosophy, as well as their development.</p>
<p>Content</p>	<p>The scope of philosophy of mathematics is about the nature of mathematics in terms of platonism, realism, logicism, structuralism, formalism, constructivism, intuitionism, mathematical limitations including the proof of the Lowenheim-Skolem Theorem, Godel's Theorem, and independent questions, mathematical truth in the view of fictionalism, mathematics as a metaphor, mathematical explanation, mathematical applicability, and introduces the theory of inconsistency with task-based active learning utilizing various IT resources.</p>
<p>Attribute Soft skill:</p>	<p>Active communication; Discipline; Collaboration; Responsibility; and Argumentation in class.</p>



Study/exam achievements:	The final grade ( <i>NA</i> ) is calculated based on the following ratio:		
	Assessment Components	Percentage of contribution	
	Participation	20%	
	Assignment	30%	
	Mid-semester test	20%	
	Final semester test	30%	
	Grade conversion of 0-100 scale into 0-4 scale is set as below:		
	Letter	Number	Grade Interval
	A	4,00	$85 \leq A \leq 100$
	A-	3,75	$80 \leq A- < 85$
	B+	3,50	$75 \leq B+ < 80$
	B	3,00	$70 \leq B < 75$
	B-	2,75	$65 \leq B- < 70$
	C+	2,50	$60 \leq C+ < 65$
	C	2,00	$55 \leq C < 60$
	D	1,00	$40 \leq D < 55$
	E	0,00	$0 \leq E < 40$
Learning Methods :	Student-centered approach; project-based learning; lecturer and discussion; and presentations (structured activities)		
Form of Media:	Power point slides; video; worksheets, and textbooks		



Literature (primary references):	<ol style="list-style-type: none"><li>1. Colyvan, Mark. 2011. An Introduction to the Philosophy of Mathematics. Sydney: University of Sydney</li><li>2. Friend, Michèle. 2007. Introduction to the Philosophy of Mathematics. Stocksfield: Acumen</li><li>3. Mancosu, Paolo. 1996. Philosophy of Mathematics and Mathematical Practice in the Seventeenth Century. Oxford: Oxford University Press</li></ol>
Notes:	<p>*1 credit unit or <i>sks</i> 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 credit unit or <i>sks</i> = 1.59 ECTS according to Rector Decree Of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2019</p>