



Universitas Negeri Surabaya
Faculty of Mathematics and Natural Sciences
Bachelor of Mathematics Education Study Program

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Basics of Mathematics	8420203043	Compulsory Study Program Subjects	T=3	P=0	ECTS=4.77	1	August 30, 2023
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
	Dr. Masriyah, M.Pd.; Prof. Dr. Tatag Yuli Eko Siswono, S.Pd., M.Pd.; Nina Rinda Prihartiwi, S.Pd., M.Pd.; Dr. Ali Shodikin		Dr. Masriyah, M.Pd.			Dr. Endah Budi Rahaju, M.Pd.	

Learning model	Case Studies
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Program Learning Outcomes (PLO)	PLO study program which is charged to the course																																																																		
	PLO-5	Demonstrate a scientific, critical and innovative attitude in teaching and learning mathematics and professional tasks																																																																	
	PLO-7	Apply basic mathematical principles to solve simple mathematical problems																																																																	
	PLO-10	Make decisions based on data/information in completing assignments that are the student's responsibility and evaluate the work that has been done																																																																	
	PLO-12	Demonstrate mathematical knowledge and insight																																																																	
	Program Objectives (PO)																																																																		
	PO - 1	Able to understand mathematics as a deductive-axiomatic structure, logic and sets and have a commitment to completing each task																																																																	
	PLO-PO Matrix																																																																		
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PO-1																																																																			
PO Matrix at the end of each learning stage (Sub-PO)																																																																			
	<table border="1" style="margin: auto;"> <tr> <th rowspan="2" style="padding: 5px;">P.O</th> <th colspan="16" style="padding: 5px;">Week</th> </tr> <tr> <th style="padding: 5px;">1</th> <th style="padding: 5px;">2</th> <th style="padding: 5px;">3</th> <th style="padding: 5px;">4</th> <th style="padding: 5px;">5</th> <th style="padding: 5px;">6</th> <th style="padding: 5px;">7</th> <th style="padding: 5px;">8</th> <th style="padding: 5px;">9</th> <th style="padding: 5px;">10</th> <th style="padding: 5px;">11</th> <th style="padding: 5px;">12</th> <th style="padding: 5px;">13</th> <th style="padding: 5px;">14</th> <th style="padding: 5px;">15</th> <th style="padding: 5px;">16</th> </tr> <tr> <td style="padding: 5px;">PO-1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PO-1																	
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PO-1																																																																			

Short Course Description	Examining the characteristics of mathematics, deductive-axiomatic systems and structures, logical operations, quantifiers, drawing conclusions, sets, relations and functions through active learning through ICT-assisted active learning using lecture, question and answer and discussion methods.
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References	Main :
	<ol style="list-style-type: none"> 1. Masriyah, 2017. Dasar- Dasar Matematika. Surabaya: Unipress Unesa. 2. Yunus, M. 2007. Logika: Suatu Pengantar . Yogyakarta: Graha Ilmu 3. Kunnen, K. 2007. The Foundation of Mathematics . 4. Stoll, R. R. 1979. Set Theory and Logic . New York: Dover Publication, Inc.
	Supporters:

Supporting lecturer		Dr. Hj. Masriyah, M.Pd. Dr. Yusuf Fuad, M.App.Sc. Prof. Dr. Tatag Yuli Eko Siswono, S.Pd., M.Pd. Dwi Nur Yuniarti, S.Si., M.Sc. Dr. Ali Shodikin, S.Pd., M.Pd. Nina Rinda Prihartiwi, S.Pd., M.Pd. Yulia Izza El Milla, S.Pd., M.Pd. Novita Vindri Harini, 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 inductive and deductive thinking patterns, axiom systems, definition theorems, and finite geometry (CLO-3)	1.Explains inductive and deductive thinking patterns, axiom systems, definition theorems, and finite geometry 2.Applying inductive and deductive thinking patterns, axiom systems, definition theorems, and finite geometry in mathematics and everyday life	Form of Assessment : Participatory Activities, Tests	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			4%
2	Understand inductive and deductive thinking patterns, axiom systems, definition theorems, and finite geometry (CLO-3)	1.Explaining Inductive and Deductive Thinking Patterns, Axiom Systems, definition theorems, and Finite Geometry. 2.Applying Inductive and Deductive Thinking Patterns, Axiom Systems, definition theorems, and Finite Geometry in mathematics and everyday life	Form of Assessment : Participatory Activities, Tests	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			2%

3	Understand inductive and deductive thinking patterns, axiom systems, definition theorems, and finite geometry (CLO-3)	<ol style="list-style-type: none"> 1.Explaining Inductive and Deductive Thinking Patterns, Axiom Systems, definition theorems, and Finite Geometry. 2.Applying Inductive and Deductive Thinking Patterns, Axiom Systems, definition theorems, and Finite Geometry in mathematics and everyday life 	Form of Assessment : Test	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			4%
4	Understand logic, conjunctions in logic, tautology, quantifiers, premises and arguments (CLO-1)	<ol style="list-style-type: none"> 1.Explain the concept of logic, conjunctions in logic, tautology, quantifiers, premises and arguments. 2.Apply the concept of logic, conjunctions in logic, tautology, quantifiers, premises and arguments. 	Form of Assessment : Participatory Activities, Tests	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			4%
5	Understand logic, conjunctions in logic, tautology, quantifiers, premises and arguments (CLO-1)	<ol style="list-style-type: none"> 1.Explain the concept of logic, conjunctions in logic, tautology, quantifiers, premises and arguments. 2.Apply the concept of logic, conjunctions in logic, tautology, quantifiers, premises and arguments. 	Form of Assessment : Participatory Activities, Tests	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			4%

6	Understand the validity of proofs, indirect proofs, and the application of logic in electrical networks (CLO-4)	<ol style="list-style-type: none"> 1.Explains the concept of validity of proof, indirect proof, and application of logic in electrical networks 2.Apply the concept of validity of proof, indirect proof, and application of logic in electrical networks 	Form of Assessment : Participatory Activities, Tests	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			4%
7	Understand the validity of proofs, indirect proofs, and the application of logic in electrical networks (CLO-4)	<ol style="list-style-type: none"> 1.Explains the concept of validity of proof, indirect proof, and application of logic in electrical networks 2.Apply the concept of validity of proof, indirect proof, and application of logic in electrical networks 	Form of Assessment : Participatory Activities	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			4%
8	Midterm Evaluation / Midterm Exam		Form of Assessment : Test	3 X 50			20%
9	Understand sets and their operations, set families, and power sets (CLO-2)	<ol style="list-style-type: none"> 1.Explain the concept of sets and their operations, families of sets, and power sets 2.Apply the concept of sets and their operations, set families, and power sets 	Form of Assessment : Participatory Activities	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			2%
10	Understand sets and their operations, set families, and power sets (CLO-2)	<ol style="list-style-type: none"> 1.Explain the concept of sets and their operations, families of sets, and power sets 2.Apply the concept of sets and their operations, set families, and power sets 	Form of Assessment : Participatory Activities	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			5%

11	Understanding relationships and functions (CLO-2)	1.Explain the concept of relations and functions 2.Apply the concepts of relations and functions		Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			7%
12	Understanding relationships and functions (CLO-2)	1.Explain the concept of relations and functions 2.Apply the concepts of relations and functions	Form of Assessment : Participatory Activities	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			5%
13	Understand the cardinality of sets, posets and similar sets (CLO-2)	1.Explain the cardinality of the concepts of sets, posets and similar sets 2.Applying the cardinality of the concepts of sets, posets and similar sets	Form of Assessment : Participatory Activities	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			5%
14	Understand the cardinality of sets, posets and similar sets (CLO-2)	1.Explain the cardinality of the concepts of sets, posets and similar sets 2.Applying the cardinality of the concepts of sets, posets and similar sets	Form of Assessment : Participatory Activities	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			7%
15	Understand the cardinality of sets, posets and similar sets (CLO-2)	1.Explain the cardinality of the concepts of sets, posets and similar sets 2.Applying the cardinality of the concepts of sets, posets and similar sets	Form of Assessment : Participatory Activities, Tests	Lectures using LMS Vinesa Asynchronous or Synchronous Practice Questions 3 X 50			5%
16	Final Semester Evaluation / Final Semester Examination		Form of Assessment : Test	3 X 50			25%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	39.5%
2.	Test	60.5%
		100%

Notes

- 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.
- 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.