	Universitas Negeri Surabaya **Faculty of Mathematics and Natural Sciences,** **Mathematics Education Masters Study Program**	**Document Code**

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Abstract Algebra (Abstract Algebra)	8410203157	Mathematics	**T=3**	**P=0**	**ECTS=6.72**	1	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Dr. Agung Lukito, M.S.	.....	Dr. Agung Lukito, M.S.

Learning model	**Case Studies**	
Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**	
	PLO-5	Able to use mathematical ideas to solve mathematical problems
	PLO-8	Able to demonstrate mathematics knowledge and understanding
	PLO-11	Collaborate and be responsible professionally and ethically in completing mathematics and mathematics education tasks
	PLO-12	Able to work on and present problems in mathematics and mathematics education
	Program Objectives (PO)	
	PO - 1	able to understand group structure and group homomorphism
	PO - 2	able to understand the concepts of subgroups, normal subgroups, factor groups, direct sum groups (external and internal) and symmetric groups
	PO - 3	able to prove the principles that apply to groups, subgroups, group homomorphisms, normal subgroups, factor groups, direct sum groups, and symmetric groups with various methods/approaches
	PO - 4	able to work on and present problems related to group structures and group homomorphisms
	PO - 5	able to collaborate and be responsible professionally and ethically in completing tasks
	PLO-PO Matrix	

P.O	PLO-5	PLO-8	PLO-11	PLO-12
PO-1				
PO-2				
PO-3				
PO-4				
PO-5				

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																
PO-2																
PO-3																
PO-4																
PO-5																

Short Course Description	Studying group structures and their properties, subgroups, normal subgroups, factor groups, and group homomorphisms
References	**Main :**
	1. Lukito, A., Manuharawati, & Khabibah, S. 2020. Pengantar Teori Grup. Zifatama Jawara. 2. Herstein, I. N. 1996. Abstract Algebra (3rd Ed.). Prentice Hall, Inc.
	Supporters:
	1. Gallian, J. 2013. Contemporary Abstract Algebra. Brooks/Cole, Cengage Learning. 2. Hodge, J. K., Schlicker, S., & Sundstrom, T. 2013. Abstract Algebra. An Inquiry-based Approach. CRC Press. 3. Herstein, I. N. 1975. Topics in Algebra. John Wiley and Sons.
Supporting lecturer	Dr. Agung Lukito, M.S.

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							0%
2							0%
3							0%
4							0%
5							0%
6							0%
7							0%
8							0%
9							0%
10							0%
11							0%
12							0%
13							0%
14							0%

15							0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

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.