



**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
Psychology of Mathematics Learning	8420202186		T=2	P=0	ECTS=3.18	6	July 17, 2024
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
	Prof. Dr. Tatag Yuli Eko Siswono, M.Pd		.....			Dr. Endah Budi Rahaju, M.Pd.	

Learning model	Case Studies
----------------	--------------

Program Learning Outcomes (PLO)	PLO study program which is charged to the course																																																			
	Program Objectives (PO)																																																			
	PO - 1	Able to understand mathematics learning problems with a psychological approach which includes the formation of mathematical concepts, idea of a scheme, mathematical thinking, interpersonal and emotional factors and problem solving in mathematics and able to use them in mathematics learning in primary and secondary schools carefully.																																																		
	PLO-PO Matrix																																																			
	<table border="1" style="margin-left: 40px;"> <tr> <td style="width: 100px; height: 20px;">P.O</td> </tr> <tr> <td style="width: 100px; height: 20px;">PO-1</td> </tr> </table>		P.O	PO-1																																																
P.O																																																				
PO-1																																																				
PO Matrix at the end of each learning stage (Sub-PO)																																																				
<table border="1" style="margin-left: 40px;"> <tr> <td rowspan="2" style="width: 100px; height: 20px;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> <td style="width: 20px;">5</td> <td style="width: 20px;">6</td> <td style="width: 20px;">7</td> <td style="width: 20px;">8</td> <td style="width: 20px;">9</td> <td style="width: 20px;">10</td> <td style="width: 20px;">11</td> <td style="width: 20px;">12</td> <td style="width: 20px;">13</td> <td style="width: 20px;">14</td> <td style="width: 20px;">15</td> <td style="width: 20px;">16</td> </tr> <tr> <td style="width: 100px; height: 20px;">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																	
P.O	Week																																																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																																				
PO-1																																																				

Short Course Description	Studying mathematics learning problems with a psychological approach which includes the formation of mathematical concepts, schematic ideas, mathematical thinking, interpersonal and emotional factors as well as problem solving in mathematics through active learning that utilizes technology and information.
--------------------------	---

References	Main :	
		<ol style="list-style-type: none"> <li>1. Solso, et.all. 2008. Psikologi Kognitif (Terjemahan). Jakarta: Erlangga.</li> <li>2. Skemp, R. 1982. The Psychology of Learning Mathematics. New York : Penguin Books</li> <li>3. Bell, F. H. 1978. Teaching and Learning Mathematics (in Secondary Schools). Iowa: Wm.C. Brown</li> <li>4. Krutetsky. 1976.The Psychology of Mathematical Abilities in School Children. Chicago: The University of Chicago Press</li> <li>5. Slavin, Robert E. 2018. Educational Psychology Theory and Practice 12th Edition. New York: Pearson.</li> </ol>
	Supporters:	

Supporting lecturer	Prof. Dr. Tatag Yuli Eko Siswono, S.Pd., M.Pd. Dr. Siti Khabibah, M.Pd. Prof. Rooselyna Ekawati, Ph.D. Ika Kurniasari, S.Pd., M.Pd. Yulia Izza El Milla, 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	Solving mathematics learning problems in terms of Piaget's theories	1.Explores issues related to Piaget's Theory 2.Solving learning problems with the principles of Piaget's Theory	<b>Criteria:</b> 1.Active student participation in group discussions in class 2.Appropriateness of questions and answers given in class discussions <b>Form of Assessment :</b> Participatory Activities	Discussion, Q&A 2 x 50 minutes		<b>Material:</b> Piaget's theory and its implementation <b>Reference:</b> <i>Slavin, Robert E. 2018. Educational Psychology Theory and Practice 12th Edition. New York: Pearson.</i>	4%
2	Solving mathematics learning problems in terms of Guilford's theories	1.Explores issues related to Guilford's Theory 2.Solving learning problems with the principles of Guilford Theory	<b>Criteria:</b> 1.Active student participation in group discussions in class 2.Appropriateness of questions and answers given in class discussions <b>Form of Assessment :</b> Participatory Activities	Discussion, Q&A 2 x 50 minutes		<b>Material:</b> Guilford theory and its implementation <b>References:</b> <i>Solso, et.all. 2008. Cognitive Psychology (Translation). Jakarta: Erlangga.</i>	4%
3	Solving mathematics learning problems in terms of Gagne's theories	1.Explores issues related to Gagne's Theory 2.Solving learning problems with the principles of Gagne's Theory	<b>Criteria:</b> 1.Active student participation in group discussions in class 2.Appropriateness of questions and answers given in class discussions <b>Form of Assessment :</b> Participatory Activities	Discussion, Q&A 2 x 50 minutes		<b>Material:</b> Gagne's theory and its implementation <b>References:</b> <i>Slavin, Robert E. 2018. Educational Psychology Theory and Practice 12th Edition. New York: Pearson.</i>	4%
4	Solving mathematics learning problems in terms of Dienes' theories	1.Explores issues related to Dienes Theory 2.Solving learning problems with the principles of Dienes Theory	<b>Criteria:</b> 1.Active student participation in group discussions in class 2.Appropriateness of questions and answers given in class discussions	Discussion, Q&A 4 x 50 minutes		<b>Material:</b> Dienes theory and its implementation <b>References:</b> <i>Slavin, Robert E. 2018. Educational Psychology Theory and Practice 12th Edition. New York: Pearson.</i>	3%
5	Solving mathematics learning problems in terms of Dienes' theories	1.Explores issues related to Dienes Theory 2.Solving learning problems with the principles of Dienes Theory	<b>Criteria:</b> 1.Active student participation in group discussions in class 2.Appropriateness of questions and answers given in class discussions <b>Form of Assessment :</b> Participatory Activities, Portfolio Assessment	Discussion, Q&A 4 x 50 minutes		<b>Material:</b> Dienes theory and its implementation <b>References:</b> <i>Slavin, Robert E. 2018. Educational Psychology Theory and Practice 12th Edition. New York: Pearson.</i>	3%
6		1.Explores issues related to Bruner's Theory 2.Solving learning problems with the principles of Bruner's Theory	<b>Criteria:</b> 1.Active student participation in group discussions in class 2.Appropriateness of questions and answers given in class discussions <b>Form of Assessment :</b> Participatory Activities	Discussion, Q&A 4 x 50 minutes		<b>Material:</b> Bruner's theory and its implementation <b>References:</b> <i>Bell, FH 1978. Teaching and Learning Mathematics (in Secondary Schools). Iowa: Wm.C. Brown</i>	0%

7	Solving mathematics learning problems in terms of Bruner's theories	1.Explores issues related to Bruner's Theory 2.Solving learning problems with the principles of Bruner's Theory	<b>Criteria:</b> 1.Active student participation in group discussions in class 2.Appropriateness of questions and answers given in class discussions <b>Form of Assessment :</b> Participatory Activities	Discussion, Q&A 4 x 50 minutes		<b>Material:</b> Bruner's theory and its implementation <b>References:</b> Bell, FH 1978. <i>Teaching and Learning Mathematics (in Secondary Schools)</i> . Iowa: Wm.C. Brown	0%
8		Students can analyze the suitability of problems in learning based on the theories of Piaget, Guilford, Gagne, Dienes, and Bruner	<b>Criteria:</b> Suitability of student answers to the problems given <b>Form of Assessment :</b> Test	Written Test (Mid-Semester Exam) 2 x 50 minutes			20%
9				Discussion, Q&A 2 x 50 minutes			0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							0%
16							0%

#### Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	13.5%
2.	Portfolio Assessment	1.5%
3.	Test	20%
		35%

#### 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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.