



**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
School Curriculum	8420202004	Compulsory Study Program Subjects	T=2	P=0	ECTS=3.18	3	July 17, 2024
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
	Dr. Endah Budi Rahaju, M.Pd; Dr. Ismail, M.Pd; Ahmad Wachidul Kohar, M.Pd.		Dr. Endah Budi Rahaju, M.Pd			Dr. Endah Budi Rahaju, M.Pd.	

Learning model	Case Studies																																																																																																																																						
Program Learning Outcomes (PLO)	<b>PLO study program that is charged to the course</b>																																																																																																																																						
	<b>PLO-5</b> Demonstrate a scientific, critical and innovative attitude in teaching and learning mathematics and professional tasks																																																																																																																																						
	<b>Program Objectives (PO)</b>																																																																																																																																						
	<b>PO - 1</b> Able to demonstrate knowledge and insight into curriculum concepts, development of the school mathematics curriculum, and analysis of the school mathematics curriculum																																																																																																																																						
	<b>PO - 2</b> Able to design strategies to overcome mathematical misconceptions in the form of learning trajectories for learning in secondary schools (SMP/SMA/SMK) by utilizing ICT																																																																																																																																						
	<b>PO - 3</b> Able to evaluate the design of strategies to overcome mathematical misconceptions in the form of learning trajectories for learning in secondary schools (SMP/SMA/SMK) by utilizing ICT																																																																																																																																						
	<b>PO - 4</b> Able to communicate ideas and research results related to the school mathematics curriculum effectively orally and in writing																																																																																																																																						
	<b>PO - 5</b> Able to make decisions based on data/information in completing tasks related to the school mathematics curriculum which are the student's responsibility and evaluating the work that has been done.																																																																																																																																						
	<b>PO - 6</b> Able to demonstrate a scientific, critical and innovative attitude in analyzing the school mathematics curriculum and student misconceptions, as well as designing and evaluating strategies for overcoming student misconceptions in mathematics learning in junior high school/high school/vocational school.																																																																																																																																						
	<b>PLO-PO Matrix</b>																																																																																																																																						
	<table border="1" style="margin: auto;"> <tr><td>P.O</td><td>PLO-5</td></tr> <tr><td>PO-1</td><td></td></tr> <tr><td>PO-2</td><td></td></tr> <tr><td>PO-3</td><td></td></tr> <tr><td>PO-4</td><td></td></tr> <tr><td>PO-5</td><td></td></tr> <tr><td>PO-6</td><td></td></tr> </table>	P.O	PLO-5	PO-1		PO-2		PO-3		PO-4		PO-5		PO-6																																																																																																																									
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<b>PO Matrix at the end of each learning stage (Sub-PO)</b>																																																																																																																																							
<table border="1" style="margin: auto;"> <tr> <th rowspan="2">P.O</th> <th colspan="16">Week</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th> </tr> <tr><td>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></tr> <tr><td>PO-2</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> <tr><td>PO-3</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> <tr><td>PO-4</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> <tr><td>PO-5</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> <tr><td>PO-6</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																	PO-2																	PO-3																	PO-4																	PO-5																	PO-6																
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<b>Short Course Description</b>	Studying the meaning of curriculum, the development of school mathematics curricula in Indonesia and other countries regarding the latest and previous curricula and their suitability for learning, curriculum analysis which includes task and material analysis, and designing strategies to overcome mathematics misconceptions in secondary schools (SMP/SMA/SMK) by utilizing ICT through task and discussion based learning.																																																																																																																																						

<b>References</b>	<b>Main :</b>	1. Dokumen kurikulum matematika sekolah Kementerian Pendidikan dan Kebudayaan					
	<b>Supporters:</b>	1. Ibrahim, dkk. 2013. Kurikulum dan Pembelajaran. Jakarta: Rajarafindo Persada. 2. Sukmadinata, Nana Syaodih. 2013. Pengembangan Kurikulum. Bandung: Remaja Rosdakarya. 3. Hamdani, Hamid. 2012. Pengembangan Kurikulum Pendidikan. Bandung: Pustaka Setia. 4. Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen & Unwin. 5. Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill. 6. Buku Guru dan Buku Siswa Pelajaran Matematika SMP, SMK, dan SMA / sederajat 7. Artikel jurnal terkait kurikulum matematika sekolah					
<b>Supporting lecturer</b>	Dr. Endah Budi Rahaju, M.Pd. Dr. Siti Khabibah, M.Pd. Abdul Haris Rosyidi, S.Pd., M.Pd. Ahmad Wachidul Kohar, S.Pd., M.Pd.						
<b>Week-</b>	<b>Final abilities of each learning stage (Sub-PO)</b>	<b>Evaluation</b>		<b>Help Learning, Learning methods, Student Assignments, [ Estimated time]</b>		<b>Learning materials [ References ]</b>	<b>Assessment Weight (%)</b>
		<b>Indicator</b>	<b>Criteria &amp; Form</b>	<b>Offline ( offline )</b>	<b>Online ( online )</b>		
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>
<b>1</b>	1.1. Understand the meaning, function and role of the school curriculum 2.2. Communicate ideas related to the meaning, function and role of the school curriculum 3.3. Make decisions based on data/information in completing tasks related to the meaning, function and role of the school curriculum 4.4. Demonstrate a scientific, critical and innovative attitude in analyzing the meaning, function and role of the school curriculum	1. Explain the meaning, function and role of the school curriculum based on the current or previous curriculum in Indonesia.	<b>Criteria:</b> accuracy in explaining the meaning, function and role of the curriculum in Indonesia  <b>Form of Assessment :</b> Participatory Activities	Collaborative approach (discussion and expository) 2 x 50 minutes		<b>Material:</b> Definition, essence and function of the school curriculum <b>Reference:</b> <i>Ibrahim, et al. 2013. Curriculum and Learning. Jakarta: Rajarafindo Persada.</i> <hr/> <b>Material:</b> Definition, essence and function of the school curriculum <b>Reader:</b> <i>Sukmadinata, Nana Syaodih. 2013. Curriculum Development. Bandung: Rosdakarya Youth.</i> <hr/> <b>Material:</b> Definition, essence and function of the school curriculum <b>Reader:</b> <i>Hamdani, Hamid. 2012. Educational Curriculum Development. Bandung: Pustaka Setia.</i>	2%

2	<p>1.1. Understand the foundations, components and principles of curriculum development</p> <p>2.2. Communicate ideas related to components and principles of curriculum development</p> <p>3.3. Make decisions based on data/information in completing tasks related to components and principles of curriculum development</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing components and principles of curriculum development</p>	<p>1.1. Explain the basis for curriculum development.</p> <p>2.2. Explain the components of curriculum development.</p> <p>3.3. Explain the principles of curriculum development</p>	<p><b>Criteria:</b> Explains the foundations, components and principles of curriculum development in Indonesia</p> <p><b>Form of Assessment :</b> Project Results Assessment / Product Assessment</p>	<p>Collaborative approach (discussion and expository) regarding the foundations, components and principles of curriculum development after students search from several sources 2 x 50 minutes</p>	<p><b>Material:</b> Principles of curriculum analysis based on various sources</p> <p><b>References:</b> <i>Ibrahim, et al. 2013. Curriculum and Learning. Jakarta: Rajarafindo Persada.</i></p> <hr/> <p><b>Material:</b> Principles of curriculum analysis based on various sources.</p> <p><b>Reference:</b> <i>Sukmadinata, Nana Syaodih. 2013. Curriculum Development. Bandung: Rosdakarya Youth.</i></p> <hr/> <p><b>Material:</b> Principles of curriculum analysis based on various sources.</p> <p><b>Reference:</b> <i>Hamdani, Hamid. 2012. Educational Curriculum Development. Bandung: Pustaka Setia.</i></p>	2%
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3	<p>1.1. Understand the development of the school mathematics curriculum</p> <p>2.2. Communicate ideas related to the development of the school mathematics curriculum</p> <p>3.3. Make decisions based on data/information in completing tasks related to the development of the school mathematics curriculum</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing developments in the school mathematics curriculum</p>	<p>1.Explain the development of the school mathematics curriculum</p> <p>2.Explains the development of the school mathematics curriculum in Indonesia</p>	<p><b>Criteria:</b></p> <p>1.Explains the development of the school mathematics curriculum, maximum up to the independent curriculum</p> <p>2.Identify the differences between each curriculum in Indonesia</p> <p><b>Form of Assessment :</b> Project Results Assessment / Product Assessment</p>	<p>Collaborative approach (discussion and expository) regarding the development of the school mathematics curriculum in Indonesia 2 x 50 minutes</p>	<p><b>Material:</b> development of the school mathematics curriculum in Indonesia</p> <p><b>Reference:</b> Ministry of Education and Culture's school mathematics curriculum document</p> <hr/> <p><b>Material:</b> development of the school mathematics curriculum in Indonesia</p> <p><b>Library:</b> Teacher's Books and Student Books for Middle School, Vocational School, and High School/equivalent Mathematics Lessons</p> <hr/> <p><b>Material:</b> 1994 curriculum, KTSP, 2013 curriculum and independent curriculum</p> <p><b>Library:</b></p> <hr/> <p><b>Material:</b> development of the school mathematics curriculum in Indonesia.</p> <p><b>Reference:</b> Journal articles related to the school mathematics curriculum</p>	2%
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4	<p>1.1. Analyze the curriculum, including competency and material analysis</p> <p>2.2. Communicate ideas related to the curriculum, including competency and material analysis</p> <p>3.3. Make decisions based on data/information in completing curriculum-related tasks, including competency and material analysis</p> <p>4. 4. Demonstrate a scientific, critical and innovative attitude in analyzing the curriculum, including competency and material analysis</p>	<p>Analyzing the 1994, 2006, 2013 mathematics curriculum and the independent curriculum including competency and material analysis</p>	<p><b>Criteria:</b></p> <p>1. Analyzing competencies and materials in the 1994, 2006, 2013 mathematics curriculum and the independent curriculum</p> <p>2. analyze the similarities and differences of the last four curricula used in Indonesia</p> <p><b>Form of Assessment :</b></p> <p>Project Results Assessment / Product Assessment</p>	<p>Collaborative approach (discussion and expository) regarding competency analysis and school mathematics curriculum materials in Indonesia 2 x 50 minutes</p>		<p><b>Material:</b> development of the school mathematics curriculum in Indonesia</p> <p><b>Reference:</b> Ministry of Education and Culture's school mathematics curriculum document</p> <hr/> <p><b>Material:</b> development of the school mathematics curriculum in Indonesia</p> <p><b>Library:</b> Teacher's Books and Student Books for Middle School, Vocational School, and High School/Equivalent Mathematics Lessons</p> <hr/> <p><b>Material:</b> Competency analysis in the 1994, 2006, 2013 mathematics curriculum and the independent curriculum.</p> <p><b>Reference:</b> Journal articles related to the school mathematics curriculum</p>	2%
5	<p>1.1. Analyze school mathematics curricula in other countries</p> <p>2.2. Communicate ideas related to school mathematics curriculum in other countries</p> <p>3.3. Make decisions based on data/information in completing tasks related to the school mathematics curriculum in other countries</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing school mathematics curricula in other countries</p>	<p>Analyzing the school mathematics curriculum of Singapore, Australia, Finland, the Netherlands, the United States</p>	<p><b>Criteria:</b></p> <p>1. Analyze the school mathematics curriculum according to the sections assigned to each group</p> <p>2. Each group analyzed the school curriculum of the two countries that had been determined at the previous meeting</p> <p><b>Forms of Assessment :</b></p> <p>Participatory Activities, Project Results Assessment / Product Assessment</p>	<p>Collaborative approach (discussion and expository) based on project results carried out in groups of 2 x 50 minutes</p>		<p><b>Material:</b> School mathematics curriculum in other countries</p> <p><b>References:</b> Goos, M., Stillman, G., Vale, C. 2007. <i>Teaching Secondary School Mathematics Research and Practice for the 21st Century</i>. Australia: Allen &amp; Unwin.</p> <hr/> <p><b>Material:</b> School mathematics curriculum in other countries</p> <p><b>References:</b> Yee, Lee Peng. 2006. <i>Teaching Secondary School Mathematics a Resource Book</i>. McGraw-Hill.</p> <hr/> <p><b>Material:</b> Mathematics curriculum for other countries</p>	2%

6	<p>1.1. Comparing school mathematics curricula in Indonesia and abroad</p> <p>2.2. Communicate ideas regarding comparisons of school mathematics curricula in Indonesia and abroad</p> <p>3.3. Make decisions based on data/information in completing assignments related to comparisons of school mathematics curricula in Indonesia and abroad</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing comparative school mathematics curricula in Indonesia and abroad</p>	<p>1.1. Comparing the Indonesian Mathematics curriculum, 2013 curriculum and overseas (Singapore, Australia, Finland, the Netherlands, America)</p> <p>2. Comparing the Indonesian Mathematics curriculum, the 2013 curriculum, the independent curriculum and the school curricula of two other countries assigned at the 5th meeting</p>	<p><b>Criteria:</b></p> <p>1. Pay attention to the similarities and differences in school curricula in two selected foreign countries</p> <p>2. Determine the similarities and differences in school curricula in Indonesia and two selected foreign countries</p> <p><b>Forms of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	<p>Through a project approach, students compare the school mathematics curricula of two selected countries. The project results are discussed together 2 x 50 minutes</p>	<p><b>Material:</b> Analysis of school mathematics curricula in Indonesia and abroad</p> <p><b>References:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> Analysis of school mathematics curricula in Indonesia and abroad</p> <p><b>References:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> Analysis of school mathematics curricula in Indonesia and abroad.</p> <p><b>Library:</b> <i>Teacher's Books and Student Books for Middle School, Vocational School and High School/equivalent Mathematics Lessons</i></p> <hr/> <p><b>Material:</b> School mathematics curriculum in the 2013 Curriculum and the independent curriculum.</p> <p><b>Reference:</b> <i>Ministry of Education and Culture's school mathematics curriculum document</i></p>	5%
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7	<p>1.1. Analyze the content standards of the junior high school mathematics curriculum for learning</p> <p>2.2. Communicate ideas related to essential concepts and misconceptions about junior high school mathematics material</p> <p>3.3. Make decisions based on data/information in completing assignments related to essential concepts and misconceptions about junior high school mathematics material</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing essential concepts and misconceptions about junior high school mathematics material</p>	Analyzing the applicable junior high school mathematics curriculum content standards (2013 and/or independent curriculum).	<p><b>Criteria:</b> Examining the standard content of the junior high school mathematics curriculum in the 2013 Curriculum and the Merdeka Curriculum</p> <p><b>Form of Assessment :</b> Project Results Assessment / Product Assessment</p>	Through group project assignments, students discuss and collaborate on the content standards of the 2 x 50 minute junior high school mathematics curriculum		<p><b>Material:</b> 2013 junior high school mathematics curriculum content standards or independent curriculum</p> <p><b>Reference:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p> <hr/> <p><b>Material:</b> Content standards for the 2013 junior high school mathematics curriculum or independent curriculum.</p> <p><b>Reference:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> Content standards for the 2013 junior high school mathematics curriculum or independent curriculum</p> <p><b>Reader:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> Content standards for the 2013 junior high school mathematics curriculum or independent curriculum</p> <p><b>Library:</b> <i>Teacher's books and student books for mathematics lessons for middle school, vocational school and high school/equivalent</i></p> <hr/> <p><b>Material:</b> Middle School Mathematics Curriculum Documents in the 2013 Curriculum and Independent Curriculum</p> <p><b>Literature:</b> <i>Ministry of Education and Culture School Mathematics Curriculum Documents</i></p>	2%
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8	UTS	1.UTS 2.-	<b>Criteria:</b> 1.UTS 2.-  <b>Form of Assessment</b> : Test	UTS write 2 x 50 minutes		<b>Material:</b> - <b>Library:</b>	20%
9	1.1. Find essential concepts and misconceptions about junior high school mathematics material 2.2. Communicate ideas related to essential concepts and misconceptions about junior high school mathematics material 3.3. Make decisions based on data/information in completing assignments related to essential concepts and misconceptions about junior high school mathematics material 4.4. Demonstrate a scientific, critical and innovative attitude in analyzing essential concepts and misconceptions about junior high school mathematics material 5.5. Designing strategies to overcome mathematics misconceptions in the form of learning trajectories for junior high school mathematics learning by utilizing ICT 6.6. Evaluate the design of strategies to overcome mathematical misconceptions in junior high school mathematics learning	essential concepts at junior high school level	<b>Criteria:</b> Discovering essential concepts at junior high school level, along with the rationale for selecting essential concepts  <b>Forms of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment	Based on project assignments given in groups, students discuss essential concepts and misconceptions about junior high school mathematics material 2 x 50 minutes		<b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum <b>Reference:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i> ----- <b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum. <b>Reference:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i> ----- <b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum <b>Reader:</b> Yee, Lee Peng. 2006. <i>Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i> ----- <b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum <b>Library:</b> <i>Teacher's book and student book for mathematics for middle school, vocational school and high school/equivalent</i>	3%



10	<p>1.1. Find essential concepts and misconceptions about junior high school mathematics material</p> <p>2.2. Communicate ideas related to essential concepts and misconceptions about junior high school mathematics material</p> <p>3.3. Make decisions based on data/information in completing assignments related to essential concepts and misconceptions about junior high school mathematics material</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing essential concepts and misconceptions about junior high school mathematics material</p> <p>5.5. Designing strategies to overcome mathematics misconceptions in the form of learning trajectories for junior high school mathematics learning by utilizing ICT</p> <p>6.6. Evaluate the design of strategies to overcome mathematical misconceptions in junior high school mathematics learning</p>	find misconceptions at junior high school level based on the 2013 curriculum and/or the independent curriculum and how to overcome these misconceptions	<p><b>Criteria:</b> The correspondence between misconceptions and how to overcome them</p> <p><b>Forms of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Based on project assignments given in groups, students discuss essential concepts and misconceptions about junior high school mathematics material 2 x 50 minutes	<p><b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum <b>Reference:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p> <hr/> <p><b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum. <b>Reference:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum <b>Reader:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> Essential concepts in junior high school mathematics material according to the 2013 mathematics curriculum or the independent curriculum <b>Library:</b> <i>Teacher's book and student book for mathematics for middle school, vocational school and high school/equivalent</i></p>	5%
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11	<p>1.1. Understand and analyze the content standards for high school and vocational mathematics curricula</p> <p>2.2. Communicate ideas related to high school and vocational mathematics curriculum content standards</p> <p>3.3. Make decisions based on data/information in completing tasks related to high school and vocational mathematics curriculum content standards</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing high school and vocational mathematics curriculum content standards</p>	Analyze the applicable high school or vocational school mathematics curriculum content standards.	<p><b>Criteria:</b> Analyze the applicable high school or vocational school mathematics curriculum content standards.</p> <p><b>Forms of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Based on the results of the group project, students discuss the standard content of the 2013 SMA/SMK mathematics curriculum and/or the independent curriculum. 2 x 50 minutes	<p><b>Material:</b> 2013 high school and vocational high school mathematics curriculum content standards or independent curriculum</p> <p><b>References:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>References:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Reference:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Library:</b> <i>Teacher's Books and Student's Books for Middle School, Vocational School, and High School Mathematics / equivalent</i></p>	5%
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12	<p>1.1. Find essential concepts and misconceptions about high school mathematics material</p> <p>2.2. Communicate ideas related to essential concepts and misconceptions about high school mathematics material</p> <p>3.3. Make decisions based on data/information in completing assignments related to essential concepts and misconceptions about high school mathematics material</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing essential concepts and misconceptions about high school mathematics material</p> <p>5.5. Designing strategies to overcome mathematics misconceptions in the form of learning trajectories for high school mathematics learning by utilizing ICT</p> <p>6.6. Evaluate the design of strategies to overcome mathematical misconceptions in high school mathematics learning</p>	Analyzing essential high school level concepts in the applicable mathematics curriculum.	<p><b>Criteria:</b> Analyzing essential high school level concepts in the applicable mathematics curriculum and their rationale</p> <p><b>Forms of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Based on the results of the group project, students discussed the 2013 high school and vocational school mathematics curriculum content standards or the independent curriculum. 2 x 50 minutes		<p><b>Material:</b> 2013 high school and vocational high school mathematics curriculum content standards or independent curriculum</p> <p><b>References:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>References:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Reference:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Library:</b> <i>Teacher's Books and Student's Books for Middle School, Vocational School, and High School Mathematics / equivalent</i></p>	5%
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13	<p>1.1. Find essential concepts and misconceptions about high school mathematics material</p> <p>2.2. Communicate ideas related to essential concepts and misconceptions about high school mathematics material</p> <p>3.3. Make decisions based on data/information in completing assignments related to essential concepts and misconceptions about high school mathematics material</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing essential concepts and misconceptions about high school mathematics material</p> <p>5.5. Designing strategies to overcome mathematics misconceptions in the form of learning trajectories for high school mathematics learning by utilizing ICT</p> <p>6.6. Evaluate the design of strategies to overcome mathematical misconceptions in high school mathematics learning</p>	Analyzing misconceptions at high school level in the applicable mathematics curriculum.	<p><b>Criteria:</b> Analyzing misconceptions and how to overcome them at high school level in the applicable mathematics curriculum and how to overcome them</p> <p><b>Form of Assessment :</b> Project Results Assessment / Product Assessment</p>	Based on the results of the group project, students discussed misconceptions and how to overcome them at high school level in the 2013 mathematics curriculum and/or the independent curriculum. 2 x 50 minutes		<p><b>Material:</b> 2013 high school and vocational high school mathematics curriculum content standards or independent curriculum</p> <p><b>References:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>References:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Reference:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Library:</b> <i>Teacher's Books and Student's Books for Middle School, Vocational School, and High School Mathematics / equivalent</i></p>	5%
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14	<p>1.1. Find essential concepts and misconceptions about vocational school mathematics material</p> <p>2.2. Communicate ideas related to essential concepts and misconceptions about vocational school mathematics material</p> <p>3.3. Make decisions based on data/information in completing assignments related to essential concepts and misconceptions about vocational school mathematics material</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing essential concepts and misconceptions about vocational school mathematics material</p> <p>5.5. Designing strategies to overcome mathematics misconceptions in the form of learning trajectories for high school mathematics learning by utilizing ICT</p> <p>6.6. Evaluate the design of strategies to overcome mathematics misconceptions in vocational school mathematics learning</p>	Analyzing misconceptions at high school level in the applicable mathematics curriculum.	<p><b>Criteria:</b> Analyze the essential concepts and rationale for vocational school level in the applicable mathematics curriculum</p> <p><b>Form of Assessment :</b> Project Results Assessment / Product Assessment</p>	Based on the results of the group project, students discussed the essential concepts of vocational school level in the 2013 mathematics curriculum and/or the independent curriculum. 2 x 50 minutes		<p><b>Material:</b> 2013 high school and vocational high school mathematics curriculum content standards or independent curriculum</p> <p><b>References:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>References:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Reference:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum.</p> <p><b>Library:</b> <i>Teacher's Books and Student's Books for Middle School, Vocational School, and High School Mathematics / equivalent</i></p>	5%
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15	<p>1.1. Find essential concepts and misconceptions about vocational school mathematics material</p> <p>2.2. Communicate ideas related to essential concepts and misconceptions about vocational school mathematics material</p> <p>3.3. Make decisions based on data/information in completing assignments related to essential concepts and misconceptions about vocational school mathematics material</p> <p>4.4. Demonstrate a scientific, critical and innovative attitude in analyzing essential concepts and misconceptions about vocational school mathematics material</p> <p>5.5. Designing strategies to overcome mathematics misconceptions in the form of learning trajectories for high school mathematics learning by utilizing ICT</p> <p>6.6. Evaluate the design of strategies to overcome mathematics misconceptions in vocational school mathematics learning</p>	Analyzing misconceptions and how to overcome them for vocational school level in the applicable mathematics curriculum.	<p><b>Criteria:</b> Analyze the essential concepts and rationale for vocational school level in the applicable mathematics curriculum</p> <p><b>Forms of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Based on the results of the group project, students discussed misconceptions and how to overcome them for the vocational school level in the 2013 mathematics curriculum and/or the independent curriculum. 2 x 50 minutes	<p><b>Material:</b> 2013 high school and vocational high school mathematics curriculum content standards or independent curriculum <b>References:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum. <b>References:</b> <i>Goos, M., Stillman, G., Vale, C. 2007. Teaching Secondary School Mathematics Research and Practice for the 21st Century. Australia: Allen &amp; Unwin.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum. <b>Reference:</b> <i>Yee, Lee Peng. 2006. Teaching Secondary School Mathematics a Resource Book. McGraw-Hill.</i></p> <hr/> <p><b>Material:</b> 2013 high school and vocational school mathematics curriculum content standards or independent curriculum. <b>Library:</b> <i>Teacher's Books and Student's Books for Middle School, Vocational School, and High School Mathematics / equivalent</i></p>	5%
16	1.UAS 2.-	UAS	<p><b>Criteria:</b> 1.UAS 2.-</p> <p><b>Form of Assessment :</b> Project Results Assessment / Product Assessment</p>	Written test 2 X 50 MINUTES	<p><b>Material:</b> Essential concepts in middle/high school/vocational school mathematics material according to the 2013 mathematics curriculum or the independent curriculum. <b>Reference:</b> <i>Goos, M., Stillman, G.,</i></p>	30%

						<p>Vale, C. 2007. <i>Teaching Secondary School Mathematics Research and Practice for the 21st Century</i>. Australia: Allen &amp; Unwin.</p> <hr/> <p><b>Material:</b> Essential concepts in middle/high school/vocational school mathematics material according to the 2013 mathematics curriculum or the independent curriculum.</p> <p><b>Reader:</b> Yee, Lee Peng. 2006. <i>Teaching Secondary School Mathematics a Resource Book</i>. McGraw-Hill.</p> <hr/> <p><b>Material:</b> Essential concepts in middle school/high school/vocational school mathematics material according to the 2013 mathematics curriculum or independent curriculum</p> <p><b>Library:</b> <i>Teacher's books and student books for middle school, vocational school and high school/equivalent mathematics lessons</i></p> <hr/> <p><b>Material:</b> Essential concepts in middle school/high school/vocational school mathematics material according to the 2013 mathematics curriculum or the independent curriculum.</p> <p><b>Reference:</b> <i>Ministry of Education and Culture school mathematics curriculum documents</i></p>
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**Evaluation Percentage Recap: Case Study**

No	Evaluation	Percentage
1.	Participatory Activities	17%
2.	Project Results Assessment / Product Assessment	63%
3.	Test	20%
		100%

## 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.