



**Universitas Negeri Surabaya**  
**Faculty of Mathematics and Natural Sciences**  
**Physics Education Undergraduate Study Program**

Document Code

**SEMESTER LEARNING PLAN**

<b>Courses</b>	<b>CODE</b>	<b>Course Family</b>	<b>Credit Weight</b>			<b>SEMESTER</b>	<b>Compilation Date</b>																																																			
Basic mathematic	8420303117		T=3	P=0	ECTS=4.77	1	July 17, 2024																																																			
<b>AUTHORIZATION</b>	<b>SP Developer</b>		<b>Course Cluster Coordinator</b>			<b>Study Program Coordinator</b>																																																				
	.....		.....			Mita Anggaryani, M.Pd., Ph.D.																																																				
<b>Learning model</b>	Case Studies																																																									
<b>Program Learning Outcomes (PLO)</b>	PLO study program which is charged to the course																																																									
	Program Objectives (PO)																																																									
	PO - 1	Understand real functions, function limits, derivatives and their applications, integrals and their applications, matrices and solutions to systems of linear equations																																																								
	PLO-PO Matrix																																																									
		<table border="1" style="margin: auto;"> <tr><td style="padding: 5px;">P.O</td></tr> <tr><td style="padding: 5px;">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: auto;"> <tr> <td style="padding: 5px;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td></td> <td style="padding: 5px;">1</td><td style="padding: 5px;">2</td><td style="padding: 5px;">3</td><td style="padding: 5px;">4</td><td style="padding: 5px;">5</td><td style="padding: 5px;">6</td><td style="padding: 5px;">7</td><td style="padding: 5px;">8</td><td style="padding: 5px;">9</td><td style="padding: 5px;">10</td><td style="padding: 5px;">11</td><td style="padding: 5px;">12</td><td style="padding: 5px;">13</td><td style="padding: 5px;">14</td><td style="padding: 5px;">15</td><td style="padding: 5px;">16</td> </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																	
P.O	Week																																																									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																																										
PO-1																																																										
<b>Short Course Description</b>	Study of functions, function limits, function continuity, function derivatives and their applications, integrals and their applications, and matrices for solving systems of linear equations.																																																									
<b>References</b>	<b>Main :</b>																																																									
	<ol style="list-style-type: none"> <li>1. Stewart, J. 2012. Calculus 7th Edition . Belmont: Brooks/Cole</li> <li>2. Thomas Jr., G., et. al. 2010. Thomas 19 Calculus 12th Edition. Boston: Addison-Wesley</li> <li>3. Purcell, E. J. et al. 2010. Kalkulus Jilid 1 Edisi Kedelapan (Terjemahan). Jakarta: Erlangga</li> <li>4. Abadi, dkk. 2014. (in press). Kalkulus, Buku 1. Surabaya.</li> <li>5. Moesono, D. 1994. Kalkulus I (Edisi Revisi). Surabaya: University Press Surabaya.</li> <li>6. Finney, R.L., Weir, M.D., Giordano F.R., 2001. Thomas' Calculus 10th Edition. USA : Addison-Wesley Publishing Company</li> </ol>																																																									
	<b>Supporters:</b>																																																									
<b>Supporting lecturer</b>	Dr. Susanah, M.Pd. Dr. Siti Khabibah, M.Pd. Budi Priyo Prawoto, S.Pd., M.Si. Muhammad Jakfar, S.Si., M.Si. Evangelista Lus Windyana Palupi, S.Pd., M.Sc. 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	Understand the concept of equality and inequality	Students can solve linear equations and inequalities		Expository 3 X 50			0%
2	Understand the concept of equality and inequality	Solving quadratic equations and inequalities		Expository 3 X 50			0%
3	Understand the concept of function	1. Identify relationships and functions; 2. Sketch a function graph		Expository 6 X 50			0%
4							0%
5	Understand probability theory	1. Distinguish between permutations and combinations; 2. Determining the probability of an event		Expository 3 X 50			0%
6	Understand the concept of matrices	1. Determining the results of matrix operations; 2. using matrix concepts in other fields		Expository 6 X 50			0%
7							0%
8	UTS			3 X 50			0%
9	Understand the concept of limits	1. Declaring a quantity as a limit; 2. Proving the limit value of a function; 3. determine the limit of a function at a certain point;		Expository 6 X 50			0%
10							0%
11	Understand the concept of derivative and differential	1. Determining the derivative of a function; 2. determine the differential of a function		Expository 6 X 50			0%
12							0%

13	Understand integral concepts and their applications	1.Determining the indefinite integral of a function; 2.calculating definite integrals; 3.solve problems using integral concepts		Expository 6 X 50			0%
14							0%
15	Understanding series	Determining the convergence of a series		Expository 3 X 50			0%
16	UAS			2 X 50			0%

#### Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

#### 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.