

 UNESA	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Doctoral Study Program in Mathematics Education					Document Code																																
SEMESTER LEARNING PLAN																																						
Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date																															
Analysis	8400203063		T=3	P=0	ECTS=7.56	2	July 18, 2024																															
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator																																
			Prof. Dr. Tatag Yuli Eko Siswono, S.Pd., M.Pd.																																
Learning model	Case Studies																																					
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																					
	PLO-2	Demonstrate the character of being tough, collaborative, adaptive, innovative, inclusive, lifelong learning and entrepreneurial spirit																																				
	PLO-6	Able to master advanced mathematical concepts.																																				
	Program Objectives (PO)																																					
	PLO-PO Matrix																																					
	<table border="1" style="margin: auto;"> <tr> <td style="width: 30px; height: 20px;"></td> <td style="width: 100px; height: 20px; text-align: center;">P.O</td> <td style="width: 100px; height: 20px; text-align: center;">PLO-2</td> <td style="width: 100px; height: 20px; text-align: center;">PLO-6</td> </tr> </table>							P.O	PLO-2	PLO-6																												
	P.O	PLO-2	PLO-6																																			
PO Matrix at the end of each learning stage (Sub-PO)																																						
<table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="width: 30px; height: 20px; text-align: center;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px; height: 20px; text-align: center;">1</td> <td style="width: 20px; height: 20px; text-align: center;">2</td> <td style="width: 20px; height: 20px; text-align: center;">3</td> <td style="width: 20px; height: 20px; text-align: center;">4</td> <td style="width: 20px; height: 20px; text-align: center;">5</td> <td style="width: 20px; height: 20px; text-align: center;">6</td> <td style="width: 20px; height: 20px; text-align: center;">7</td> <td style="width: 20px; height: 20px; text-align: center;">8</td> <td style="width: 20px; height: 20px; text-align: center;">9</td> <td style="width: 20px; height: 20px; text-align: center;">10</td> <td style="width: 20px; height: 20px; text-align: center;">11</td> <td style="width: 20px; height: 20px; text-align: center;">12</td> <td style="width: 20px; height: 20px; text-align: center;">13</td> <td style="width: 20px; height: 20px; text-align: center;">14</td> <td style="width: 20px; height: 20px; text-align: center;">15</td> <td style="width: 20px; height: 20px; text-align: center;">16</td> </tr> </table>						P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Short Course Description	Study of topological concepts in metric spaces (neighborhoods, open sets, closed sets, closed sets, subspaces, separable metric spaces), sequences in metric spaces, complete metric spaces, continuous functions and homeomorphisms in metric spaces, compact metric spaces (sets compact, finite intersection properties, sequential compact), Baire categories, function sequences (convergence of function sequences, Ascoli-Arzela Theorem), topological spaces (basic concepts in topological spaces, subspaces, bases and subbases), measurable sets, properties properties of measurable sets, Lebesgue measures, immeasurable sets, measurable functions, Lebesgue Integrals, general measures and integrals, and classical Banach Spaces. Lectures begin with an explanation of concepts and principles, assignments and discussions with students, as well as presentations using ICT with an assessment system including assignments (30%), participation (20%), mid-semester assessment (20%) and final semester assessment (30%).																																					
References	Main :																																					
	1. [1]. Royden, H.L. 1989. <i>Real Analysis</i> . New York: Macmillan Publishing Company [2]. Dudley, R. M. (2018). <i>Real analysis and probability</i> . CRC Press. [3]. Wheeden, R. L. (2015). <i>Measure and integral: an introduction to real analysis</i> (Vol. 308). CRC press. [4]. Tvrđy, M., Monteiro, G. A., & Slavik, A. (2018). <i>Kurzweil-Stieltjes Integral: Theory and Applications</i> (Vol. 15). World Scientific.																																					
	Supporters:																																					
Supporting lecturer																																						

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

- 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.

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.