	Universitas Negeri Surabaya Faculty of Engineering, Mechanical Engineering Education Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Mathematics I	8320302063		T=2	P=0	ECTS=3.18	1	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	Ir. Wahyu Dwi Kurniawan, S.Pd., M.Pd.

Learning model	Case Studies

Program Learning Outcomes (PLO)	PLO study program that is charged to the course
	Program Objectives (PO)
	PLO-PO Matrix

	P.O

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

Short Course Description	Understanding of basic mathematics used, functions and derivatives of functions, application of differential calculations, in studying the field of engineering/automotive studies

References	Main :

1. Moodoto, M. Y. 1990. Matematika Dasar A . Surabaya: Unipress.
2. Spregie, Murry R. 1989. Matematika Dasar . Terjemahan KasirIskandar. Jakarta: Erlangga.
3. Paul A. Calter, MSME & Michael A.Calter, Ph.D. 2011. Technical Mathematics with Calculus, .John Willey & Sons Inc. Wesleyan University:United Stated ofAmerica
4. Huw Fox& W. Bolton. 2002. Mathematics for Engin eers and Technologists . Elsevier: Science & Technology Books
5. Stewart, J. 2012. Calculus 7th Edition. Belmont: Brooks-Cole
6. Thomas, Jr, G et.al. 2010. Thomas 19 Calculus 12th Edition. Boston: Addison-Wesley
7. Purcell, E. J. et.al. 2010. Calculus Jilid 1 Edisi kedelapan. Jakarta: Erlangga
8. Savitri,D dan Budi Priyo, 2014. Kalkulus. Surabaya:Zifatama

Supporters:

Supporting lecturer	Dr. Dian Savitri, S.Si., M.Si. Diah Wulandari, S.T., M.T. Ferly Isnomo Abdi, S.T., S.Pd., M.T.

Week-	Final abilities of each	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]	Learning materials [	Assessment Weight (%)

	learning stage (Sub-PO)	Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)	References]	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Understand the concept of Numbers	Classify numbers in number systems		Scientific 2 X 50			0%
2	understand the concept of equality and inequality	solve equations and inequalities		scientific 2 X 50			0%
3	understand the concept of equality and inequality	solve equations and inequalities		scientific 2 X 50			0%
4	Understand the concept of function	1.identify relationships and functions 2.Sketch a function graph		Scientific 2 X 50			0%
5	Understand the concept of function	1.identify relationships and functions 2.Sketch a function graph		Scientific 2 X 50			0%
6	understand the concept of limits	determine the limit of a function at a certain point		scientific 2 X 50			0%
7	understand the concept of limits	determine the limit of a function at a certain point		scientific 2 X 50			0%
8	UTS			2 X 50			0%
9	Understand derivatives and differentials	1.determine the derivative of a function 2.determine the differential of a function		scientific 2 X 50			0%
10	Understand derivatives and differentials	1.determine the derivative of a function 2.determine the differential of a function		scientific 2 X 50			0%
11	Understand derivatives and differentials	1.determine the derivative of a function 2.determine the differential of a function		scientific 2 X 50			0%
12	Understand derivatives and differentials	1.determine the derivative of a function 2.determine the differential of a function		scientific 2 X 50			0%

13	understand the applications of derivatives and differentials in other fields	Solving problems using derivatives		scientific 2 X 50			0%
14	understand the applications of derivatives and differentials in other fields	Solving problems using derivatives		scientific 2 X 50			0%
15	understand the applications of derivatives and differentials in other fields	Solving problems using derivatives		scientific 2 X 50			0%
16	UAs			2 X 50			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.