							Document Code
(UNESA logo)	**Universitas Negeri Surabaya** **Faculty of Mathematics and Natural Sciences** **Master of Science Education Study Program**						

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Statistics	8410102169		T=2	P=0	ECTS=4.48	1	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	Dr. Eko Hariyono, 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	This course aims to enable students to be able to apply appropriate statistical techniques to process data in addition to in-depth discussions and conceptual developments associated with quantitative and qualitative approaches which focus on various statistical techniques that are widely used in science education research, both qualitative and quantitative research. Through this course, it is hoped that students will have suggestions for scientific thinking to map and analyze science education problems to find the right solutions. Lectures are conducted in the form of lectures, questions and answers, discussions, and chapter reports with presentation of results.

References	**Main :**
	1. Kaiser, M. S. (2005). Advance statistical methods Iowa. State University: Departement of Statistics. 2. Coletti, P. (2010). Advanced statistis. Free Univeristy of Bolzano Bozen. 3. Shalizi, C.R. (2013). Advance data analiysis . Cosma Rohilla Spring 2013. 4. Qian, J. (2012). An introduction to advanced probability and statistics. China, junhuiq@gmail.com.
	Supporters:

Supporting lecturer	Prof. Dr. Erman, M.Pd. Prof. Nadi Suprapto, S.Pd., M.Pd., Ph.D.

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	Understanding Basic Statistics learning outcomes	Mention the learning outcomes of Basic Statistics	**Criteria:** Student answers are included in the Participation score	Delivery of information and discussion 3 X 50			0%

No							
2	Understand the concept of descriptive statistics	Describe data in the form of tables and graphs. Calculating data centralization measures	**Criteria:** The results of student work are included in the assignment value	Presentation, discussion, questions and answers. 3 X 50			0%
3	Understand the concept of descriptive statistics	Describe data in the form of tables and graphs. Calculating data centralization measures.	**Criteria:** Student work is included in the assignment grade	Presentation, discussion. 3 X 50			0%
4	Understand the concept of opportunity and opportunity distribution	Determining the probability of an event for continuous distributed data.	**Criteria:** Student answers are included in the UTS score	Practice and discussion 3 X 50			0%
5	Understand the concept of opportunity and opportunity distribution	Determining the probability of an event for continuous distributed data.	**Criteria:** Student answers are included in the UTS score	Practice and discussion 3 X 50			0%
6	Understand how to estimate population parameters	Determine point and interval estimates.	**Criteria:** Student answers are included in the UTS score	Practice and discussion 3 X 50			0%
7	Understand how to estimate population parameters	Determine point and interval estimates.	**Criteria:** Student answers are included in the UTS score	Practice and discussion 3 X 50			0%
8	Meetings 2 - 7	Meetings 2 - 7	**Criteria:** Student answers are used as UTS scores	3 X 50 test			0%
9	Understand the concept of hypothesis testing for comparison purposes and how to test parameters	Write down pairs of null hypotheses with alternatives. Establish a formula to test the hypothesis.	**Criteria:** Student answers are included in the UAS score	Practice and discussion. 3 X 50			0%
10	Understand how to test parameters	Solve hypothesis testing questions for cases of one and two populations	**Criteria:** Student answers are included in the UAS score	Exercises, assignments and discussions. 3 X 50			0%
11	Understand how to test parameters	Solve case hypothesis testing questions of more than two populations	**Criteria:** Student answers are included in the assignment value	Practice, assignment and discussion 3 X 50			0%
12	Understand the concept of relationships between variables and the strength of the relationship	Draw regression lines and calculate correlation coefficients	**Criteria:** Student answers are included in the UAS score	Presentation, discussion, assignments and exercises 3 X 50			0%
13	Understand the concept of relationships between variables and the strength of the relationship	Draw regression lines and calculate correlation coefficients	**Criteria:** Student answers are included in the UAS score	Presentation, discussion, assignments and exercises 3 X 50			0%
14	Understand the concept of non-parametric statistics	Solve hypothesis testing questions for cases of one, two and more than two populations (non-parametric)	**Criteria:** Student answers are included in the UAS score	Discussion, exercises and assignments 3 X 50			0%

| 15 | Understand the concept of non-parametric statistics | Solve hypothesis testing questions for cases of one, two and more than two populations (non-parametric) | **Criteria:**
1. 1. Participation during lectures, carried out through observation (weight 2)
2. 2. The Mid-Semester Examination (UTS) is carried out assessing all relevant indicators through a written exam, with a weighting of (2)
3. 3. The Final Semester Examination (UAS) is carried out assessing all relevant indicators through a written examination, with a weight of (3))
4. 4. Product assessment Practical report, as an assignment, with weight (3)
5. The final NA is (participation value x2) (assignment value x 3) (UTS value x 2) UAS value (3) divided by 10 | Discussion, exercises and assignments 3 X 50 | | | 0% |

16	Understand hypothesis testing for comparison and relationship purposes	Solve hypothesis testing questions	**Criteria:** 1.1. Participation during lectures, carried out through observation (weight 2) 2.2. The Mid-Semester Examination (UTS) is carried out assessing all relevant indicators through a written exam, with a weighting of (2) 3.3. The Final Semester Examination (UAS) is carried out assessing all relevant indicators through a written examination, with a weight of (3)) 4.4. Product assessment Practical report, as an assignment, with weight (3) 5.The final NA is (participation value x2) (assignment value x 3) (UTS value x 2) UAS value (3) divided by 10	Final Exam Semester 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.