



**Universitas Negeri Surabaya
Faculty of Engineering
, Electrical Engineering Education Undergraduate Study Program**

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date		
Statistics	8320102178		T=2 P=0 ECTS=3.18	4	July 17, 2024		
AUTHORIZATION	SP Developer		Course Cluster Coordinator	Study Program Coordinator			
	Dr. Nur Kholis, S.T., M.T.			
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					
Short Course Description	Descriptive Statistics, including: data description (data tables and graphs), central tendency (average, mode, median, decile, quartile and percentile), dispersion (standard deviation, variance). Statistical computer program (SPSS). Estimation of population parameters (mean, standard deviation/variance, proportion). Principles of hypothesis testing (one tail and two tails). Parametric statistics: (1) similarity test of the average of one sample and two samples (t-test and z test), (2) test of similarity of the average of k samples (1-way ANOVA, 2-way factorial ANOVA, and post hoc test), (3) correlation analysis (moment and partial products), (4) regression analysis. Test analysis requirements (normality of distribution, homogeneity/homoscedasticity of variance, linearity of homoscedasticity/heteroscedasticity relationship, independence of independent variables (multicollinearity), and auto correlation). Non-parametric statistics includes comparative hypothesis testing: (1) one sample, (2) two independent samples, (3) two correlated samples, (4) many (k) samples, (5) associative hypothesis testing of nominal and ordinal data.						
	References						
References	Main :						
	1. Basuki, Ismet. 2014. Handout Mata Kuliah Statistika TM-1 sd TM-16 (Print Out Power Point). Ferguson, George A. 1998. Statistical Analysis In Psychology And Education . New York: McGraw-Hill. Peer, I.S. 2006. Statistical Analysis for Education and Psychology Researchers . London: UK Falmer Press. Sudjana. 1992. Metoda Statistika . Bandung: Tarsito. Wijaya. 2001. Analisis Statistik dengan Program SPSS . Bandung. Alfabeta. Wijaya. 2003. Statistika Non Parametrik: Aplikasi Program SPSS . Bandung. Alfabeta						
Supporting lecturer	Supporters:						
	Prof. Dr. Ismet Basuki, M.Pd. Prof. Dr. Joko, M.Pd., M.T. Dr. Rina Harimurti, S.Pd., M.T.						
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 meaning of statistics and statistics, types of data, measurement scales and data presentation.	1.Can explain the meaning of statistics and statistics, types of data, and measurement scales. 2.Can apply data presentation in the form of data tables and graphs manually and with the SPSS application.	Criteria: Correctness of manual calculations Correct analysis using SPSS Conformity with assignment instructions Plagiarism detected results	TM[1]: Presentation, question and answer, discussion, SPSS practicum. TRS[2]: Doing Task 1a manually and SPSS. MAN[3]: Reading literature. [1] Face to face [2] Structured [3] Independent 2 X 50			0%
2	Can apply data centralization measures	Manually and SPSS, with various techniques/formulas, with single and group data; can determine: arithmetic, measuring and harmonic averages; mode; median; determine the location and value of deciles and percentiles.	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	TM: Presentation, question and answer, discussion, SPSS practicum. TRS: Doing Task 1b manually and SPSS. MAN: Reading literature. 2 X 50			0%
3	Can apply central tendency	Manually and SPSS, with various techniques/formulas, with single and group data; can determine: range, standard deviation, variance, skewness, kurtosis, raw score	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	TM: Presentation, question and answer, discussion, SPSS practicum. TRS: Doing Task 1c manually and SPSS. MAN: Reading literature. 2 X 50			0%
4	Can estimate population parameters from sample statistics	Manually and SPSS, you can estimate population parameters regarding mean, standard deviation, variance and proportion.	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, giving assignments 2 X 50			0%
5	Can apply the principles of hypothesis testing	Manually and SPSS, can apply hypothesis testing regarding equality of means, standard deviations, proportions; either two tails or one tail.	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, giving assignments 2 X 50			0%
6	Can apply t-test	Manually and SPSS, you can apply one sample t-test, paired sample t-test, and independent sample t-test.	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
7	Can apply one way anova	Manually and SPSS, can apply one way anova and post hoc test	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
8	UTS	UTS	Criteria: UTS	UTS 2 X 50			0%

9	Can apply two way anova	Manually and SPSS, can apply two way anova and post hoc test	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
10	Can apply product moment correlation and partial correlation	Manually and SPSS can apply correlational relationship tests (product moment correlation various techniques) and partial correlation.	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	TM: Presentation, question and answer, discussion, SPSS practicum, TRS: Doing Assignment 5a manually and SPSS, MAN: Reading literature. 2 X 50			0%
11	Can apply regression analysis	Manually and SPSS you can apply multiple regression analysis with 3 predictors.	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
12	Can apply conditional tests, apply conditional tests, t-test and anova analysis	Manually and SPSS you can apply the distribution normality test using the Chi Square, Kolmogorov-Smirnov, and Shapiro Wilk techniques) Variance homogeneity test (F test, Bartlett, Levene)	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
13	Can apply test requirements for linear correlation analysis and multiple linear regression	Manually and SPSS can apply tests of linear correlation analysis and multiple linear regression, including: homoscedasticity/heteroscedasticity, linearity of relationships, independence of independent variables (multicollinearity), autocorrelation	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
14	Nonparametric statistics 1: hypothesis testing for cases of 1 sample, two paired samples, and k paired samples	Manually and SPSS can apply the 1 sample case hypothesis, including the Binomial Sign Test, χ^2 Test, Run Test (Median & Mean), Komolgorov-Smirnov Test. Manually and SPSS can apply case hypotheses for 2 paired samples, including: Sign Test, Wilcoxon Signed Rank Test. Manually and SPSS can apply the case hypothesis to k paired samples, including: Qochran Q Test, Friedman Test).	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
15	Non-parametric statistics 2: hypothesis testing for cases of 2 samples and k independent samples	Manually and SPSS can apply the case hypothesis of 2 independent samples, including: Mann Withney's U Test, and χ^2 Test. Manually and SPSS can apply the hypothesis of k independent samples, including: Kruskal Wallis Test and Median Expansion Test.	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 2 X 50			0%
16	Non-parametric statistics 3: testing the associative relationship hypothesis	Manually and SPSS can apply non-parametric statistics for: hypothesis testing of associative relationships, including: (1) Spearman Rank Correlation, (2) Tau-Kendal rank correlation, (3) Kendall Concordance Correlation, (4) Pi Correlation, (5) Contingency coefficient	Criteria: Correctness of manual calculations, correct analysis using SPSS, conformity with assignment instructions, plagiarism detection results	Presentation, question and answer, discussion, assignment 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** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities 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.