	Universitas Negeri Surabaya Faculty of Social and Legal Sciences Geography Education Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Statistics	8720202167	Compulsory Curriculum Subjects - National	T=2	P=0	ECTS=3.18	4	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Case Studies**

Program Learning Outcomes (PLO)

PLO study program that is charged to the course

PLO-5	Able to make appropriate decisions to solve educational problems and transformative geography learning by utilizing various learning resources based on science and technology and the arts

Program Objectives (PO)

PO - 1	Able to analyze regional characteristics and regionalization (regionalization) in the context of statistical and disaster analysis based on geographic principles and approaches to support sustainable development.
PO - 2	Able to formulate, process, analyze data and present geosphere information with statistical analysis of both physical and human aspects using geospatial technology for geographic learning and research
PO - 3	Able to analyze regional characteristics and regionalization (regionalization) in the context of statistical and disaster analysis based on geographic principles and approaches to support sustainable development.
PO - 4	Demonstrate a responsible attitude towards work in the field of calculations and concepts in the study of statistical analysis independently

PLO-PO Matrix

P.O	PLO-5
PO-1	
PO-2	
PO-3	
PO-4	

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
PO-1																
PO-2																
PO-3																
PO-4															✔	

Short Course Description	Review and understand the basic concepts of statistics, descriptive, inferential, parametric and non-parametric statistics. Material includes t test, one-way anova, two-way anova, regression, correlation, cluster analysis, factor analysis, correspondence analysis, and how to select them. Students have a scientific attitude and are able to carry out data analysis and draw conclusions from the results of the analysis. Learning is carried out for one semester using a project-based learning approach with lecture methods, question and answer, analysis practice with SPSS and individual assignments. Assessment is carried out through written tests and portfolios.
References	**Main :**

1. Anderson, dkk. 2002. Statistics f or b usiness a nd e conomics . Singapura: Thomson Asia Pt Ltd.
2. Bisma M. 1997. Prinsip dan m etode r iset e pidemiologi . Yogyakarta: Gadjah Mada University Press.
3. Dajan, A. 1984. Pengantar m etode s tatistik jilid I . Jakarta: Pustaka LP3ES
4. Dajan, A. 1996. Pengantar m etode s tatistik jilid II . Jakarta: Pustaka LP3ES
5. Daniel, WW. 1995. Biostatistics . New York: John Willey & Sons.
6. Gunawan, I. 2016. Pengantar statistika inferensial . Rajawali Press
7. Kuntoro, dkk. 2011. Pelatihan a nalisis d ata d engan SPSS . Unair: Departemen Kependudukan dan Biostatistika.
8. Rogerson, P. A. 2014. Statistical methods for geography . SAGE Publications Ltd.
9. Sudjana, MA. 2005. Metoda s tatistika . Tarsito
10. Sukestiyarno, 2014. Statistika dasar . Penerbit Andi
11. Trihendradi, C. 2010. Step by step SPSS 18 analisis data statistik . Andi Press
12. Santoso, S. 2014. Statistik multivariat . PT Elex Media Komputindo

Supporters:	

Supporting lecturer	Dra. Ita Mardiani Zain, M.Kes. Dr. Muzayanah, S.T., M.T. Nurul Makhmudiyah, S.Si., 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	Able to understand the concept of data and statistics	- Explaining data - Explaining statistics and statistics - Explaining the role of statistics and its development - Explaining types of statistics - Explaining population and samples - Explaining how data is collected - Explaining measurement scales	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Participatory Activities	- Lecture - Questions and Answers - Practice questions 2 X 50	-	**Material:** statistics **References:** *Dajan, A. 1984. Introduction to statistical methods volume I. Jakarta: LP3ES Library*	5%
2	Able to understand the concept of data and statistics	- Explaining data - Explaining statistics and statistics - Explaining the role of statistics and its development - Explaining types of statistics - Explaining population and samples - Explaining how data is collected - Explaining measurement scales	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Participatory Activities, Portfolio Assessment	- Lecture - Questions and Answers - Practice questions 2 X 50	-	**Material:** statistics **References:** *Dajan, A. 1996. Introduction to statistical methods volume II. Jakarta: LP3ES Library*	5%
3	Able to understand descriptive statistical methods in solving problems	- Presenting data with tables - Presenting data with graphs/diagrams - Creating frequency distributions - Creating histograms and frequency polygons - Calculating average, median, mode - Calculating range, standard deviation and variance, quartiles, deciles and percentiles - Explaining the steps in enter data	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice	-	**Material:** descriptive **Reference:** *Sukestiyarno, 2014. Basic statistics. Andi Publisher* **Material:** descriptive **Bibliography:** *Sudjana, MA. 2005. Statistical methods. Tarsito*	10%

4	Able to understand descriptive statistical methods in solving problems	- Presenting data with tables - Presenting data with graphs/diagrams - Creating frequency distributions - Creating histograms and frequency polygons - Calculating average, median, mode - Calculating range, standard deviation and variance, quartiles, deciles and percentiles - Explaining the steps in enter data	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice	-	**Material:** descriptive **Reference:** *Sukestiyarno, 2014. Basic statistics. Andi Publisher* **Material:** descriptive **Bibliography:** *Sudjana, MA. 2005. Statistical methods. Tarsito*	10%
5	Able to understand descriptive statistical methods in solving problems	- Presenting data with tables - Presenting data with graphs/diagrams - Creating frequency distributions - Creating histograms and frequency polygons - Calculating average, median, mode - Calculating range, standard deviation and variance, quartiles, deciles and percentiles - Explaining the steps in enter data	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice	-	**Material:** descriptive **Reference:** *Sukestiyarno, 2014. Basic statistics. Andi Publisher* **Material:** descriptive **Bibliography:** *Sudjana, MA. 2005. Statistical methods. Tarsito*	10%
6	Able to understand the t test analysis method	- Explain the meaning of the t test - Explain the requirements for using the t test - Explain how to calculate a one sample t test - Explain how to calculate a paired two sample t test - Explain the two sample t test free of homogeneous variance - Explain the two sample t test free of heterogeneous variance - Explain the steps steps to process data in t test analysis - Explain the results of data analysis in t test analysis	**Criteria:** 1.- 20% participation 2.- 30% duty **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice	-	**Material:** t test **References:** *Trihendradi, C. 2010. Step by step SPSS 18 statistical data analysis. Andi Press*	5%
7	Able to understand the variance analysis method (ANOVA) to solve problems	- Explain the meaning of ANOVA - Explain the conditions for using ANOVA - Explain how to calculate one-way ANOVA - Explain how to calculate two-way ANOVA - Explain the steps for processing data in one-way ANOVA analysis - Explain the steps for processing data in two-way ANOVA analysis - Explain the results data analysis in ANOVA analysis	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice		**Material:** anova **Reference:** *Bisma M. 1997. Principles and methods of epidemiological research. Yogyakarta: Gadjah Mada University Press.*	5%

8	UTS	UTS	**Criteria:** UTS 20% **Form of Assessment** : Test	UTS 2 X 50	-		0%
9	Able to understand regression analysis methods	- Explain the meaning of regression - Explain how to calculate simple regression analysis - Explain how to calculate multiple regression analysis - Explain how to calculate multiple logistic regression - Explain the steps for processing data in regression analysis - Explain the results of data analysis in regression analysis	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Assessment of Project Results / Product Assessment, Practices / Performance	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice	-	**Material:** regression **Reference:** *Santoso, S. 2014. Multivariate statistics. PT Elex Media Komputindo*	10%
10	Able to understand correlations to solve problems	- Explains how to calculate Product Moment correlation from Pearson - Explains how to calculate Spearman/Kendal Tau correlation - Explains how to calculate correlation with Chi Square - Explains the steps for processing data in correlation analysis - Explains the results of data analysis in correlation analysis	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice		**Material:** correlation **Reference:** *Santoso, S. 2014. Multivariate statistics. PT Elex Media Komputindo* **Material:** correlation **References:** *Anderson, et al. 2002. Statistics for business and economics. Singapore: Thomson Asia Pt Ltd.*	10%
11	Able to understand correlations to solve problems	- Explains how to calculate Product Moment correlation from Pearson - Explains how to calculate Spearman/Kendal Tau correlation - Explains how to calculate correlation with Chi Square - Explains the steps for processing data in correlation analysis - Explains the results of data analysis in correlation analysis	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice		**Material:** correlation **Reference:** *Santoso, S. 2014. Multivariate statistics. PT Elex Media Komputindo* **Material:** correlation **References:** *Anderson, et al. 2002. Statistics for business and economics. Singapore: Thomson Asia Pt Ltd.*	10%
12	Able to understand Cluster Analysis	- Explain the meaning of Cluster Analysis - Explain the purpose of Cluster Analysis - Explain the Non-Hierarchical Model - Explain the Hierarchical Model - Explain the steps for processing data in Cluster Analysis - Explain the results of data analysis in Cluster Analysis	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice		**Material:** cluster **Reference:** *Santoso, S. 2014. Multivariate statistics. PT Elex Media Komputindo*	5%

13	Able to understand factorial analysis	- Explain the meaning of Factorial Analysis - Explain the purpose of Factorial Analysis - Explain Confirmatory Factor Analysis - Explain Exploratory Factor Analysis - Explain the steps for processing data in Factor Analysis - Explain the results of data analysis in Factor Analysis	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Project Results Assessment / Product Assessment	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice	-	**Material:** Factors **References:** *Santoso, S. 2014. Multivariate statistics. PT Elex Media Komputindo*	5%
14	Able to understand discriminant analysis	- Explain the meaning of Discriminant Analysis - Explain the purpose of Discriminant Analysis - Explain the steps for processing data in Discriminant Analysis - Explain the results of data analysis in Discriminant	**Criteria:** 1.- 20% Participation 2.- 30% Duty **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice		**Material:** discriminant **References:** *Santoso, S. 2014. Multivariate statistics. PT Elex Media Komputindo*	5%
15	Able to understand Correspondence analysis / MDS (Multi Dimensional Scalling)	- Explain the meaning of Correspondence Analysis - Explain the purpose of Correspondence Analysis - Explain the steps to process data in Correspondence Analysis - Explain the results of data analysis in Correspondence Analysis	**Criteria:** 1.- 20% participation 2.- 30% duty **Form of Assessment** : Project Results Assessment / Product Assessment, Portfolio Assessment	- Lectures - Questions and Answers - Practice questions - 2 X 50 computer application practice	-	**Material:** correspondence **Reference:** *Santoso, S. 2014. Multivariate statistics. PT Elex Media Komputindo*	5%
16	UAS		**Form of Assessment** : Test	test 2 x 50	-		0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	15.83%
2.	Project Results Assessment / Product Assessment	45.83%
3.	Portfolio Assessment	12.5%
4.	Practice / Performance	25.83%
		99.99%

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.