	Universitas Negeri Surabaya Faculty of Economics and Business Master of Accounting Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Statistics	6210103006	Compulsory Study Program Subjects	T=2	P=0	ECTS=4.48	1	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Dr. Ni Nyoman Alit Triani, S.E., M.Ak.	Dr. Pujiono, SE., M.Si., Ak., CA	Dr. Ni Nyoman Alit Triani, S.E., M.Ak.

Learning model	**Case Studies**	
Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**	
	PLO-6	Demonstrate a responsible attitude towards work in their field of expertise independently
	PLO-7	Able to compile ideas, thoughts and scientific arguments in the fields of financial accounting, auditing, management accounting and public sector accounting responsibly and with academic ethics, as well as communicating them
	PLO-13	Able to solve economic and business problems through quantitative research
	PLO-15	Able to manage research in the business sector and communicate the results
	Program Objectives (PO)	
	PO - 1	Demonstrate a responsible attitude towards work in their field of expertise independently
	PLO-PO Matrix	

P.O	PLO-6	PLO-7	PLO-13	PLO-15
PO-1				

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																

Short Course Description	In this course students learn about descriptive and inferential statistics in the use of cross section, time series and panel data. Lectures are carried out using problem-based, project-based, discussion and presentation learning models.
References	**Main :**
	1. Lind, Douglas A. , Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.
	Supporters:
Supporting lecturer	Prof. Dr. Pujiono, SE., Ak., M.Si. Prof. Dr. Dian Anita Nuswantara, S.E., M.Si., Ak. Dr. Ni Nyoman Alit Triani, S.E., M.Ak.

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	Determines the level of data measurement	1. Able to differentiate types of statistics 2. Able to explain types of variables 3. Able to carry out data measurement levels	**Criteria:** 1.1. Be able to differentiate between types of statistics 2.2. Be able to explain the types of variables 3.3. Able to carry out data measurement levels **Form of Assessment** : Participatory Activities, Portfolio Assessment	Offline and Off line 3 X 50	Able to organize article ideas using data measurement levels	**Material:** Able to organize article ideas using levels of data measurement. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	3%
2	Able to calculate the relative location of the mean, median, and mode, dot plot data and steam-and-leaf display	1. Able to calculate sample and population averages 2. Able to calculate weighted averages 3. Explain the relative location of the mean, median and mode using SPSS tools 4. Able to carry out dispersion size tests 5. Able to draw dot plots of data 6. Able to calculate and read steam-and-leaf results from SPSS output results 7. Able to determine steam and leaft from the calculated data	**Criteria:** 1.1. Able to calculate sample and population averages 2.2. Able to calculate the weighted average 3.3. Explain the relative location of the mean, median, and mode using the SPSS tool 4.4. Able to carry out disperse size tests 5.5. Able to describe dot plot data 6.6. Able to calculate and read steam-and-leaf results from SPSS output results 7.7. Able to determine steam and leaft from calculated data **Form of Assessment** : Participatory Activities, Tests	Case Based Learning 3 X 50	Able to develop article ideas by determining population and sample selection methods in compiling articles with a quantitative approach	**Material:** Able to develop article ideas by determining population and sample selection methods in compiling articles using a quantitative approach. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	2%

3	Able to calculate the mean, variance, and standard deviation of discrete probability distributions and normal probability distributions	1. Explain random variables 2. Be able to calculate the binomial probability distribution 3. Be able to calculate the poison probability distribution 4. Be able to calculate the standard normal probability distribution 5. Be able to calculate the normal approximation to the binomial	**Criteria:** 1.1. Explain random variables 2. Be able to calculate the binomial probability distribution 2.3. Be able to calculate the probability distribution of poison 3.4. Able to calculate the standard normal probability distribution 4.5. Able to calculate the normal approach to binomials **Form of Assessment** : Participatory Activities, Tests	Case Based Learning 3 X 50	Able to develop ideas for constructing binomial probability distributions in quantitative studies	**Material:** Able to develop ideas for constructing binomial probability distributions in quantitative studies. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	3%
4	Able to determine the sampling method	1. Able to carry out sampling methods 2. Explain the reasons for sampling 3. Able to carry out simple random sampling 4. Explain systematic random sampling 5. Able to carry out stratified random sampling 6. Able to carry out cluster sampling 7. Explain the middle limit theorem	**Criteria:** 1.1. Able to carry out sampling methods 2.2. Explain the rationale for the sample 3.3. Able to carry out simple random sampling 4.4. Explain systematic random sampling 5.5. Able to take stratified random samples 6.6. Able to carry out cluster sampling 7.7. Explain the middle limit theorem **Form of Assessment** : Participatory Activities, Tests	case based learning 3 X 50	Able to solve ideas for determining samples in preparing quantitative articles	**Material:** Able to solve ideas for determining samples in preparing quantitative articles. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	3%
5	Able to determine estimates and confidence intervals on population means and select appropriate sample sizes	1. Able to calculate point estimates on population averages 2. Able to carry out confidence interval tests on population averages 3. Able to carry out confidence interval tests for a proportion 4. Able to carry out appropriate sample sizes 5. Able to calculate using the SPSS application	**Criteria:** 1.1. Be able to calculate point estimates for population averages 2.2. Able to carry out confidence interval tests on population averages 3.3. Able to carry out a confidence interval test for a proportion 4.4. Able to carry out an appropriate sample size 5.5. Able to calculate using the SPSS application **Form of Assessment** : Participatory Activities, Tests	Case based learning 3 X 50	Able to organize ideas and determine confidence intervals in analyzing each variable using SPSS	**Material:** Able to organize ideas and determine confidence intervals in analyzing each variable using SPSS **Library:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	2%

6	Able to provide the right decision in the five-stage hypothesis testing procedure and p value in hypothesis testing	1. Able to carry out hypothesis testing 2. Able to carry out a five-stage procedure to test a hypothesis 3. Able to carry out one-sided and two-sided significant tests 4. Able to calculate p value in hypothesis testing	**Criteria:** 1.1. Able to carry out hypothesis testing 2.2. Able to carry out a five-stage procedure to test hypotheses 3.3. Able to carry out one-sided and two-sided significance tests 4.4. Able to calculate p value in hypothesis testing **Form of Assessment** : Participatory Activities, Tests	Case based learning 3 X 50	Able to solve the determination of hypothesis testing using one way or two way methods in quantitative preparation	**Material:** Able to solve the determination of hypothesis testing using one way or two way methods in quantitative preparation. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	4%
7	Able to make the right decision in two-sample hypothesis testing: independent samples and dependent samples	1. Able to calculate a two-sample hypothesis test: independent samples 2. Explain the two-sample proportion test 3. Able to carry out a two-sample hypothesis test: dependent samples	**Criteria:** 1.1. Able to calculate a two-sample hypothesis test: the samples are independent 2.2. Explain the two-sample proportion test 3.3. Able to carry out hypothesis testing on two samples: dependent sample **Form of Assessment** : Participatory Activities, Tests	Able to make the right decision in two-sample hypothesis testing: independent samples and 3 X 50 dependent samples		**Material:** Able to make the right decision in two-sample hypothesis testing: independent samples and dependent samples **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	5%
8	UTS	UTS	**Criteria:** UTS **Form of Assessment** : Participatory Activities, Tests	UTS 3 X 50		**Material:** UTS **Library:**	20%
9	Able to describe the F distribution, ANOVA test, two-way ANOVA with interaction	1. Able to calculate the F distribution 2. Able to explain the ANOVA test 3. Able to carry out two-way analysis of variance 4. Able to carry out two-way ANOVA test with interaction	**Criteria:** 1.1. Be able to calculate the F distribution 2.2. Be able to explain the ANOVA test 3.3. Able to carry out two-way variance analysis 4.4. Able to carry out two-way ANOVA testing with interactions **Form of Assessment** : Participatory Activities, Tests	Case based Learning 3 X 50	Able to solve problems in determining the F distribution, two-way ANOVA testing with interaction with SPSS tools in testing between variables	**Material:** Able to solve problems in determining the F distribution, two-way ANOVA testing with interaction with SPSS tools in testing between variables. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics . Fifteenth Edition. United States: McGraw-Hill.*	5%

10	Able to describe and provide appropriate decisions in correlation analysis, assess predictive ability by regression equations, and predict from interval estimates	1. Able to carry out correlation analysis 2. Able to carry out correlation coefficients 3. Able to draw regression lines 4. Able to explain significant slope 5. Able to make predictions in regression equations 6. Able to make predictions from interval estimates	**Criteria:** 1.1. Able to carry out correlation analysis 2.2. Able to carry out correlation coefficients 3.3. Be able to draw a regression line 4.4. Able to explain significant slope 5.5. Able to make predictions in regression equations 6.6. Able to make predictions from interval estimates **Form of Assessment** : Participatory Activities, Tests	Case Based learning 3 X 50	Able to carry out correlation testing and develop ideas for determining variables in preparing articles to see the correlation between variables in testing	**Material:** Able to carry out correlation testing and develop ideas for determining variables in preparing articles to see the correlation between variables in testing. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	5%
11	Able to describe and provide appropriate decisions in correlation analysis, assess predictive ability by regression equations, and predict from interval estimates	1. Able to carry out correlation analysis 2. Able to carry out correlation coefficients 3. Able to draw regression lines 4. Able to explain significant slope 5. Able to make predictions in regression equations 6. Able to make predictions from interval estimates	**Criteria:** Able to carry out correlation testing and develop ideas for determining variables in preparing articles to see the correlation between variables in testing **Form of Assessment** : Participatory Activities, Tests	Case Based Learning 3 X 50	Able to carry out correlation testing and develop ideas for determining variables in preparing articles to see the correlation between variables in testing	**Material:** Able to carry out correlation testing and develop ideas for determining variables in preparing articles to see the correlation between variables in testing. **References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	5%
12	Able to describe and make appropriate decisions in multiple analysis: evaluating multiple regression equations, evaluating assumptions in multiple regression, regression with interaction and multilevel regression	1. Able to calculate and test multiple analysis 2. Able to test assumptions in multiple regression 3. Able to determine regression models with interactions 4. Able to test multilevel regression 5. Able to test multiple regression	**Criteria:** 1.1. Able to calculate and test multiple analysis 2.2. Able to test assumptions in multiple regression 3.3. Able to determine a regression model with interactions 4.4. Able to test multilevel regression 5.5. Able to carry out multiple regression tests **Form of Assessment** : Participatory Activities, Tests	Case based learning 3 X 50	Able to develop article ideas using multiple regression testing	**Material:** Able to develop article ideas using multiple regression testing **. References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	5%

13	Able to describe and make appropriate decisions in multiple analysis: evaluating multiple regression equations, evaluating assumptions in multiple regression, regression with interaction and multilevel regression	1. Able to calculate and test multiple analysis 2. Able to test assumptions in multiple regression 3. Able to determine regression models with interactions 4. Able to test multilevel regression 5. Able to test multiple regression	**Criteria:** 1.1. Able to calculate and test multiple analysis 2.2. Able to test assumptions in multiple regression 3.3. Able to determine a regression model with interactions 4.4. Able to test multilevel regression 5.5. Able to carry out multiple regression tests **Form of Assessment** : Participatory Activities, Tests	Case based learning 3 X 50	Able to develop article ideas using multiple regression testing	**Material:** Able to develop article ideas using multiple regression testing **. References:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	3%
14	Able to describe and provide appropriate decisions in linear trends, least squares methods and Durbin-Watson statistics	1. Able to carry out time series component tests 2. Able to carry out linear trend tests 3. Able to carry out non-linear trend tests 4. Able to carry out Durbin-Watson statistical tests	**Criteria:** 1.1. Able to carry out time series component tests 2.2. Able to carry out linear trend tests 3.3. Able to carry out non-linear trend tests 4.4. Able to carry out the Durbin-Watson statistical test **Form of Assessment** : Participatory Activities, Tests	Case Based Learning 3 X 50	Able to develop article ideas and carry out time series component testing; linear trend test ; non-linear trend test; Durbin-Watson statistical test	**Material:** Able to develop article ideas and carry out time series component testing; linear trend test; non-linear trend test; Durbin-Watson statistical test **Bibliography:** *Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	2%
15	Able to describe and make appropriate decisions in testing hypotheses whose data distribution comes from a normal population, Wilcoxon signed rank for bound samples, Kruskal-Wallis test: analysis of variance according to rank	1. Able to carry out the Chi-square test 2. Able to carry out hypothesis testing with a normal distribution 3. Able to calculate and analyze the Wilcoxon sign rank for bound samples 4. Able to calculate and explain the Kruskall-Wallis test	**Criteria:** 1.1. Able to carry out the Chi-square test 2.2. Able to test hypotheses with a normal distribution 3.3. Able to calculate and analyze the Wilcoxon sign rank for bound samples 4.4. Able to calculate and explain the Kruskall-Wallis test **Form of Assessment** : Participatory Activities, Portfolio Assessment	Case Based Learning 3 X 50	Able to carry out Chisquare test; test the hypothesis that the distribution is normal; calculating and analyzing Wilcoxon signed ranks for bound samples; calculate and explain the Kruskall-Wallis test	**Material:** Able to carry out Chi-square test; test the hypothesis that the distribution is normal; calculating and analyzing Wilcoxon signed ranks for bound samples; calculating and explaining the Kruskall-Wallis test **References:** *Lind, Douglas A. , Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.*	3%

16	UAS	UAS	**Criteria:** UAS **Form of Assessment** : Participatory Activities, Tests	UAS 3 X 50		**Material:** UAS **Literature:**	30%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	50%
2.	Portfolio Assessment	3%
3.	Test	47%
		100%

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.