



**Universitas Negeri Surabaya  
Faculty of Economics and Business  
Bachelor of Accounting Study Program**

**Document Code**

**SEMESTER LEARNING PLAN**

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Statistics	6220103090	Compulsory Study Program Subjects	T=3	P=0	ECTS=4.77	2	May 8, 2023
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
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<b>Learning model</b>	Case Studies
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<b>Program Learning Outcomes (PLO)</b>	<b>PLO study program that is charged to the course</b>																																																																																																					
	<b>PLO-5</b>	Able to apply and analyze basic principles of various economic theories; Accounting Science, Business; and Business Law																																																																																																				
	<b>Program Objectives (PO)</b>																																																																																																					
	<b>PO - 1</b>	Able to analyze a responsible attitude towards work in their area of expertise independently and in group																																																																																																				
	<b>PO - 2</b>	Able to make appropriate decisions in the context of problem solving based on the results of data analysis																																																																																																				
	<b>PO - 3</b>	Able to design and carry out research in the field of accounting and communicate the results																																																																																																				
	<b>PO - 4</b>	Able to analyze theoretical and practical concepts regarding various descriptive statistics, parametric and nonparametric inferential statistics (discrete and continuous probability distributions, estimation and confidence intervals, one and two sample hypothesis testing, multiple regression analysis, nonparametric methods)																																																																																																				
	<b>PLO-PO Matrix</b>																																																																																																					
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>P.O</td> <td>PLO-5</td> </tr> <tr> <td>PO-1</td> <td></td> </tr> <tr> <td>PO-2</td> <td></td> </tr> <tr> <td>PO-3</td> <td></td> </tr> <tr> <td>PO-4</td> <td></td> </tr> </table>	P.O	PLO-5	PO-1		PO-2		PO-3		PO-4																																																																																											
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<b>PO Matrix at the end of each learning stage (Sub-PO)</b>																																																																																																						
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th rowspan="2">P.O</th> <th colspan="16">Week</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th> </tr> <tr> <td>PO-1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PO-2</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PO-3</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>PO-4</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	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																
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<b>Short Course Description</b>	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.
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<b>References</b>	<b>Main :</b>

1. Lind, Douglas A. , Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business & Economics. Fifteenth Edition. United States: McGraw-Hill.
2. Ken Black, (2013), Business Statistics, John Wiley & Sons.
3. Hair, J.F., Black, B., Babin, B., Anderson, R, E & Tatham, R. L., (2006). Multivariate data analysis, 6th Edition, New Jersey: Prentice Hall International, Inc.

**Supporters:**

**Supporting lecturer**  
 Prof. Dr. Pujiono, SE., Ak., M.Si.  
 Dr. Ni Nyoman Alit Triani, S.E., M.Ak.  
 Rediyanto Putra, S.E., M.S.A.

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 determine the level of data measurement	1.Accuracy in explaining and evaluating types of statistics 2.Accuracy in explaining and evaluating types of variables 3.Accuracy in explaining and evaluating research cases by lecturers 4.Accuracy in explaining and measuring the level of data measurement	<b>Criteria:</b> Descriptive rubric Accuracy of describing and explaining  <b>Form of Assessment :</b> Participatory Activities	TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment	SIDIA	<b>Material:</b> Chapter 1 <b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i>	4%
2	Able to calculate the relative location of the mean, median, and mode, dot plot data and steam-and-leaf display	1.Accuracy in determining the relative position of the average 2.Accuracy in determining the median 3.Accuracy in determining the mode	<b>Criteria:</b> Descriptive rubric Accuracy of describing and explaining  <b>Form of Assessment :</b> Participatory Activities	TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment	SIDIA	<b>Material:</b> Chapter 2 <b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i>	4%

3	Able to calculate the mean, variance, and standard deviation of discrete probability distributions and normal probability distributions	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating random variables</li> <li>2.Accuracy in explaining and evaluating binomial probability distributions</li> <li>3.Accuracy in explaining and evaluating poisson probability distributions</li> <li>4.Accuracy in explaining and evaluating standard normal probability distributions</li> <li>5.Accuracy in explaining and evaluating the normal approach to binomials</li> </ol>	<p><b>Criteria:</b> Descriptive rubric Accuracy of describing and explaining</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 3 <b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	4%
4	Able to determine the sampling method	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating sampling methods</li> <li>2.Accuracy in explaining and evaluating the rationale for the sample</li> <li>3.Accuracy in explaining and evaluating simple random sampling</li> <li>4.Accuracy in explaining and evaluating systematic random sampling</li> <li>5.Accuracy in describing and evaluating stratified random samples</li> <li>6.Accuracy in explaining and evaluating cluster sampling</li> <li>7.Accuracy in explaining and evaluating the middle limit theorem</li> </ol>	<p><b>Criteria:</b> Determine the selection of sampling methods that will be used</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 4 <b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	4%

5	Able to determine estimates and confidence intervals on population means and select appropriate sample sizes	<ol style="list-style-type: none"> <li>1.Accuracy in describing and evaluating point estimates of population means</li> <li>2.Accuracy in describing and evaluating confidence intervals on population means</li> <li>3.Accuracy in describing and evaluating confidence intervals for a proportion</li> <li>4.Accuracy in explaining and evaluating choosing the appropriate sample size</li> <li>5.Accuracy in explaining and evaluating using the SPSS application</li> </ol>	<p><b>Criteria:</b> Determine estimates and confidence intervals on population means and appropriate sample sizes</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion</p> <p>BM (1x(3x60')): Understanding of material</p> <p>PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 5</p> <p><b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	5%
6	Able to provide appropriate decisions in the five-stage hypothesis testing procedure and p value in hypothesis testing and two-sample hypothesis testing	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating whether a hypothesis is tested</li> <li>2.Accuracy in explaining and evaluating the five-stage procedure for testing hypotheses</li> <li>3.Accuracy in explaining and evaluating one-sided and two-sided significance tests</li> <li>4.Accuracy in explaining and evaluating the p value in hypothesis testing</li> </ol>	<p><b>Criteria:</b> Five-stage procedure and hypothesis testing and p value</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion</p> <p>BM (1x(3x60')): Understanding of material</p> <p>PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 6</p> <p><b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	5%

7	Able to describe the F distribution, ANOVA test, two-way ANOVA with interaction	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating two-sample hypothesis testing: independent samples</li> <li>2.Accuracy in explaining and evaluating two sample proportion tests</li> <li>3.Accuracy in explaining and evaluating two-sample hypothesis tests: bound samples</li> </ol>	<p><b>Criteria:</b> Conduct a two-sample hypothesis test: independent and dependent samples</p> <p><b>Form of Assessment :</b> Portfolio Assessment, Practice / Performance</p>	<p>TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 7 <b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	10%
8	UTS		<p><b>Criteria:</b> Maximum Score 100</p> <p><b>Form of Assessment :</b> Test</p>	Midterm exam			15%
9	Able to describe the F distribution, ANOVA test, two-way ANOVA with interaction	<ol style="list-style-type: none"> <li>1.Be able to explain and evaluate the F distribution</li> <li>2.Able to explain and evaluate the ANOVA test</li> <li>3.Able to explain and evaluate two-way analysis of variance</li> <li>4.Able to explain and evaluate two-way ANOVA with interactions</li> </ol>	<p><b>Criteria:</b> Conduct ANOVA test, two-way ANOVA with interaction</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 9 <b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	4%
10	Able to describe the F distribution, ANOVA test, two-way ANOVA with interaction	<ol style="list-style-type: none"> <li>1.Be able to explain and evaluate the F distribution</li> <li>2.Able to explain and evaluate the ANOVA test</li> <li>3.Able to explain and evaluate two-way analysis of variance</li> <li>4.Able to explain and evaluate two-way ANOVA with interactions</li> </ol>	<p><b>Criteria:</b> Conduct ANOVA test, two-way ANOVA with interaction</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 10 <b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	4%

11	Able to describe and provide appropriate decisions in correlation analysis, assess the predictive ability of regression equations, and predict from interval estimates	<ol style="list-style-type: none"> <li>1. Accuracy in explaining and evaluating what correlation analysis is</li> <li>2. Accuracy in explaining and evaluating correlation coefficients</li> <li>3. Accuracy in explaining and evaluating describes the regression line</li> <li>4. Accuracy in explaining and evaluating the significance of the slope</li> <li>5. Accuracy in explaining and evaluating predictive ability by regression equations</li> <li>6. Accuracy in explaining and evaluating predictions from interval estimates</li> </ol>	<p><b>Criteria:</b> Carrying out correlation analysis tests with SPSS software</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion</p> <p>BM (1x(3x60')): Understanding of material</p> <p>PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 11</p> <p><b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	4%
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12	Able to describe and provide appropriate decisions in correlation analysis, assess the predictive ability of regression equations, and predict from interval estimates	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating what correlation analysis is</li> <li>2.Accuracy in explaining and evaluating correlation coefficients</li> <li>3.Accuracy in explaining and evaluating describes the regression line</li> <li>4.Accuracy in explaining and evaluating the significance of the slope</li> <li>5.Accuracy in explaining and evaluating predictive ability by regression equations</li> <li>6.Accuracy in explaining and evaluating predictions from interval estimates</li> </ol>	<p><b>Criteria:</b> Carrying out correlation analysis tests with SPSS software</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 12</p> <p><b>References:</b> <i>Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i></p>	4%
13	Able to describe and provide appropriate decisions in correlation analysis, assess the predictive ability of regression equations, and predict from interval estimates	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating what correlation analysis is</li> <li>2.Accuracy in explaining and evaluating correlation coefficients</li> <li>3.Accuracy in explaining and evaluating describes the regression line</li> <li>4.Accuracy in explaining and evaluating the significance of the slope</li> <li>5.Accuracy in explaining and evaluating predictive ability by regression equations</li> <li>6.Accuracy in explaining and evaluating predictions from interval estimates</li> </ol>	<p><b>Criteria:</b> Carrying out correlation analysis tests with SPSS software</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment</p>	SIDIA	<p><b>Material:</b> Chapter 13</p> <p><b>References:</b></p>	3%

14	Able to describe and make appropriate decisions in multiple analysis: evaluating multiple regression equations, evaluating assumptions in multiple regression, regression with interaction, multilevel regression, and non-parametric analysis	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating time series components</li> <li>2.Accuracy in explaining and evaluating linear trends</li> <li>3.Accuracy in explaining and evaluating non-linear trends</li> <li>4.Accuracy in explaining and evaluating Durbin-Watson statistics</li> </ol>	<b>Criteria:</b> Test the smallest quadrant method with SPSS software  <b>Form of Assessment :</b> Participatory Activities	TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment	SIDIA	<b>Material:</b> Chapter 14 <b>References:</b> Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. <i>Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i>	5%
15	Able to describe and make appropriate decisions in multiple analysis: evaluating multiple regression equations, evaluating assumptions in multiple regression, regression with interaction, multilevel regression, and non-parametric analysis	<ol style="list-style-type: none"> <li>1.Accuracy in explaining and evaluating time series components</li> <li>2.Accuracy in explaining and evaluating linear trends</li> <li>3.Accuracy in explaining and evaluating non-linear trends</li> <li>4.Accuracy in explaining and evaluating Durbin-Watson statistics</li> </ol>	<b>Criteria:</b> Test the smallest quadrant method with SPSS software  <b>Form of Assessment :</b> Portfolio Assessment, Practice / Performance	TM (1x(3x50')): Explanation of material and discussion BM (1x(3x60')): Understanding of material PT (1x(3x60')): Individual assignment	SIDIA	<b>Material:</b> Chapter 15 <b>References:</b> Lind, Douglas A., Marchal, William G., Wathen, Samuel A. 2012. <i>Statistical Techniques in Business &amp; Economics. Fifteenth Edition. United States: McGraw-Hill.</i>	10%
16	UAS		<b>Form of Assessment :</b> Test	Final exams			15%

#### Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	50%
2.	Portfolio Assessment	10%
3.	Practice / Performance	10%
4.	Test	30%
		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.