



**Universitas Negeri Surabaya
Faculty of Education, Master
of Education Technology Study Program**

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date
Data analysis	8610302016		T=2 P=0 ECTS=4.48	1	July 17, 2024
AUTHORIZATION	SP Developer		Course Cluster Coordinator	Study Program Coordinator	
	Dr. Fajar Arianto, M.Pd		Dr. H. Andi Mariono, M.Pd.	

Learning model	Project Based Learning
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Program Learning Outcomes (PLO)	PLO study program which is charged to the course																																																																																																									
PLO-6	Able to uphold human values to improve the quality of life in society, nation, state and civilization based on Pancasila and diversity in carrying out their duties																																																																																																									
PLO-8	Able to analyze, evaluate and create through studies according to their field of expertise to solve problems in society or industry																																																																																																									
PLO-10	Able to deepen and expand education, learning and training programs to provide original and proven contributions through multidisciplinary research																																																																																																									
PLO-12	Able to master knowledge about the theory of implementing education and training programs (performance technology); general concept of curriculum development, learning, learning resources through a multidisciplinary approach, research and development of educational/learning/training technology that is beneficial to society and science, receiving national and international recognition																																																																																																									
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	PLO-PO Matrix																																																																																																									
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Short Course Description	Produce scientific papers based on empirical research and apply appropriate statistical data analysis techniques and be able to solve problems through case study learning
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References	Main :		<ol style="list-style-type: none"> Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. Statistics for research [3rd ed] . New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistic 3. Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistic Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC Cohen, Louis, Lawrence Manion, dan Keith Morrison. 2007. Research Methods in Education. New York: Routledge. 				
	Supporters:						
Supporting lecturer	Prof. Dr. Yatim Riyanto, M.Pd. Dr. Fajar Arianto, S.Pd., M.Pd. Dr. Atan Pramana, M.Pd.						
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 types of research methods and data analysis techniques	<ol style="list-style-type: none"> Understand the basics of research Identify types of research Understand basic statistical procedures 	Criteria: accuracy of discussion Form of Assessment : Test	Inquiry learning 2 X 50		Material: introduction to statistics Bibliography: Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. Statistics for research [3rd ed]. New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics 3. Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC	2%
2	Determine the type of statistical data	Able to determine the type of data in statistics	Criteria: depth and appropriateness of the study Form of Assessment : Test	inquiry learning 2 X 50		Material: types of statistical data Bibliography: Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. Statistics for research [3rd ed]. New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics 3. Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC	2%
3	Determine validity and reliability	Able to determine validity and reliability according to the type of data and instrument	Criteria: Suitability of procedures and decision making Form of Assessment : Test	Problem solving 2 X 50		Material: validity and reliability Bibliography: Cohen, Louis, Lawrence Manion, and Keith Morrison. 2007. Research Methods in Education. New York: Routledge.	5%
4	Students are able to carry out calculations and analyze the normality and homogeneity of research data	<ol style="list-style-type: none"> students are able to analyze the results of calculating data normality Students are able to analyze the results of calculating data homogeneity 	Criteria: accuracy of problem solving Form of Assessment : Test	Problem solving 2 X 50		Material: data normality Bibliography: Cohen, Louis, Lawrence Manion, and Keith Morrison. 2007. Research Methods in Education. New York: Routledge.	5%

5	Students are able to carry out calculations and analyze the normality and homogeneity of research data	1.students are able to analyze the results of calculating data normality 2.Students are able to analyze the results of calculating data homogeneity	Criteria: accuracy of problem solving Form of Assessment : Test	Problem solving 2 X 50		Material: data normality Bibliography: <i>Cohen, Louis, Lawrence Manion, and Keith Morrison. 2007. Research Methods in Education. New York: Routledge.</i>	5%
6	Students are able to analyze multicollinearity tests	1.Able to determine the types of anova analysis 2.Able to determine data analysis according to the problem	Criteria: 1.test accuracy 2.accuracy of determining analytical techniques 3.accuracy of interpretation of data analysis results Form of Assessment : Participatory Activities	case study 2 X 50		Material: Anova Bibliography: <i>Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. Statistics for research [3rd ed]. New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics 3. Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC</i>	5%
7	Students are able to analyze multicollinearity tests	1.Able to determine the types of anova analysis 2.Able to determine data analysis according to the problem	Criteria: 1.test accuracy 2.accuracy of determining analytical techniques 3.accuracy of interpretation of data analysis results Form of Assessment : Participatory Activities	case study 2 X 50		Material: Anova Bibliography: <i>Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. Statistics for research [3rd ed]. New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics 3. Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC</i>	5%
8	UTS	UTS	Criteria: Actively participate and fulfill UTS duties Form of Assessment : Participatory Activities, Tests	UTS 2 X 50		Material: Students are able to analyze multicollinearity tests. References: <i>Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. Statistics for research [3rd ed]. New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics 3. Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC</i>	1%
9	Able to determine and apply data analysis with MANOVA	1.Able to apply data analysis techniques using MANOVA 2.Able to interpret data from MANOVA calculations	Criteria: accuracy of calculation methods and results Form of Assessment : Participatory Activities	case study 2 X 50		Material: Manova data analysis Library: <i>Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics</i>	9%

10	Able to determine and apply data analysis with MANOVA	1.Able to apply data analysis techniques using MANOVA 2.Able to interpret data from MANOVA calculations	Criteria: accuracy of calculation methods and results Form of Assessment : Participatory Activities	case study 2 X 50		Material: Manova data analysis Library: <i>Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics</i>	10%
11	Able to determine and apply data analysis with MANOVA	1.Able to apply data analysis techniques using MANOVA 2.Able to interpret data from MANOVA calculations	Criteria: accuracy of calculation methods and results Form of Assessment : Participatory Activities	case study 2 X 50		Material: Manova data analysis Library: <i>Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics</i>	10%
12	Able to determine and apply data analysis with MANOVA	1.Able to identify variables in factorial design 2.Able to analyze the results of factorial design calculations	Criteria: 1.accuracy of determining research variables 2.accuracy of the analysis process 3.accuracy of data interpretation resulting from data analysis Form of Assessment : Participatory Activities	case studies		Material: Factorial design References: <i>Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC</i>	10%
13	Able to determine and apply data analysis with MANOVA	1.Able to identify variables in factorial design 2.Able to analyze the results of factorial design calculations	Criteria: 1.accuracy of determining research variables 2.accuracy of the analysis process 3.accuracy of data interpretation resulting from data analysis Form of Assessment : Participatory Activities	case studies		Material: Factorial design References: <i>Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC</i>	10%

14	Able to determine and apply data analysis with MANOVA	1.Able to analyze data 2.Able to interpret data based on variable relationships	Criteria: 1.accuracy of determining the type of data 2.accuracy of data analysis techniques 3.accuracy of data interpretation Form of Assessment : Participatory Activities	case study 2 x 50		Material: data analysis References: Brook, Richard J. 2018. <i>Applied Regression Analysis and Experimental Design.</i> London:Routledge;CRC Material: data analysis Bibliography: Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. <i>Statistics for research [3rd ed].</i> New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. <i>Multivariate statistics: a vector space approach.</i> Inst of Mathematical Statistics 3. Brook, Richard J. 2018. <i>Applied Regression Analysis and Experimental Design.</i> London:Routledge;CRC Material: data analysis Bibliography: Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. <i>Statistics for research [3rd ed].</i> New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. <i>Multivariate statistics: a vector space approach.</i> Inst of Mathematical Statistics 3. Brook, Richard J. 2018. <i>Applied Regression Analysis and Experimental Design.</i> London:Routledge;CRC	10%
15	Able to determine and apply data analysis with MANOVA	1.Able to analyze data 2.Able to interpret data based on variable relationships	Criteria: 1.accuracy of determining the type of data 2.accuracy of data analysis techniques 3.accuracy of data interpretation Form of Assessment : Participatory Activities	case study 2 x 50		Material: data analysis References: Brook, Richard J. 2018. <i>Applied Regression Analysis and Experimental Design.</i> London:Routledge;CRC Material: data analysis Bibliography: Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. <i>Statistics for research [3rd ed].</i> New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. <i>Multivariate statistics: a vector space approach.</i> Inst of Mathematical Statistics 3. Brook, Richard J. 2018. <i>Applied Regression Analysis and Experimental Design.</i> London:Routledge;CRC Material: data analysis Bibliography: Shirley Dowdy, Stanley Wearden, Daniel Chilko. 2004. <i>Statistics for research [3rd ed].</i> New Jersey: Wiley-Interscienc 2. Morris L. Eaton.2007. <i>Multivariate statistics: a vector space approach.</i> Inst of Mathematical Statistics 3. Brook, Richard J. 2018. <i>Applied Regression Analysis and Experimental Design.</i> London:Routledge;CRC	10%

16	Final exams	UAS	Criteria: Actively participate and fulfill UAS duties Form of Assessment : Participatory Activities	UAS 2 x 50		Material: UAS References: Brook, Richard J. 2018. <i>Applied Regression Analysis and Experimental Design.</i> London:Routledge;CRC	1%
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Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	80.5%
2.	Test	19.5%
		100%

Notes

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.