SEMESTER LEARNING PLAN

Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Data analysis		8610902016		T=4	P=0	ECTS=8.96	2	July 19, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	Hirnanda Dimas Pradana, M.Pd.

Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**
	Program Objectives (PO)
	PLO-PO Matrix

P.O

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

Short Course Description	

References	Main :	
	Supporters:	

Supporting lecturer	

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	1.Understand the basics of research 2.Identify types of research 3.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 suitability 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*	3%
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 perform 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:** *Cohen, Louis, Lawrence Manion, and Keith Morrison. 2007. Research Methods in Education. New York: Routledge.*	5%
5	Students are able to perform 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:** *Cohen, Louis, Lawrence Manion, and Keith Morrison. 2007. Research Methods in Education. New York: Routledge.*	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:** *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*	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:** *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*	5%
8	UTS	UTS		2 X 50			0%
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:** *Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics*	10%
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:** *Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics*	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:** *Morris L. Eaton.2007. Multivariate statistics: a vector space approach. Inst of Mathematical Statistics*	10%
12		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]s factorial design 3.accuracy of data interpretation resulting from data analysis **Form of Assessment** : Participatory Activities	case studies		**Material:** Factorial design **References:** *Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC*	10%

| 13 | | 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]s factorial design 3.accuracy of data interpretation resulting from data analysis **Form of Assessment** : Participatory Activities | case studies | | **Material:** Factorial design **References:** *Brook, Richard J. 2018. Applied Regression Analysis and Experimental Design. London:Routledge;CRC* | 10% |
| 14 | | 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. Applied Regression Analysis and Experimental Design. London:Routledge;CRC* **Material:** data analysis **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* **Material:** data analysis **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* | 10% |

| 15 | | 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. Applied Regression Analysis and Experimental Design. London:Routledge;CRC* **Material:** data analysis **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* **Material:** data analysis **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* | 10% |
| 16 | Final exams | | | | | | 0% |

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	80%
2.	Test	20%
		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** ability in the process and student learning outcomes are specific and measurable statements that identify the ability 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.