



**INSTITUT TEKNOLOGI SEPULUH NOPEMBER
FACULTY OF SCIENCE AND DATA ANALYTICS
DEPARTMENT OF STATISTICS
STATISTICS UNDERGRADUATE PROGRAM**

Course	Course Name	:	Statistical Data Analysis
	Course Code	:	SS234523
	Credit	:	3 SKS
	Semester	:	V

COURSE DESCRIPTION

This course focuses on the ability of students to be able to apply statistical methods that have been studied so far related to solving real problems in the field properly and correctly. In addition, students are equipped with the ability to use the correct analytical methods, the ability to process and analyze data and output interpretation obtained from statistical software. Students are also required to communicate the results of their analysis in the form of written and oral reports.

PROGRAM LEARNING OUTCOME

- PLO-2 Able to study and utilize science and technology in order to apply it to certain areas of expertise, and be able to make appropriate decisions from the results of their own work or group work in the form of final project reports or other forms of learning activities whose output is equivalent to the Final Project through logical, critical thinking, systematic and innovative.
- PLO-3 Able to manage self-learning and develop oneself as a personal lifelong learner to compete at national and international levels, to make a real contribution to solving problems by implementing information and communication technology and paying attention to the principles of sustainability and understanding technology-based entrepreneurship.
- PLO-6 Able to design, collect, and perform data management with the right methodology
- PLO-7 Able to use modern computing devices to solve statistical problems
- PLO-8 Able to use computing techniques to solve statistical problems
- PLO-9 Able to apply statistical methods to analyze theoretical and real problems
- PLO-10 Able to apply business, industrial, economic, social, health or environmental statistical methods to real problems

COURSE LEARNING OUTCOME

- CLO.1 Able to recall concepts in basic and advanced statistics (anova, regression, experimental design, multivariate analysis, Qualitative Data Analysis, and time series analysis), data management in statistical program packages.
- CLO.3 Able to present and analyze data with the right statistical methods and interpret it
- CLO.4 Able to formulate a real problem that can be solved by statistical methods
- CLO.5 Able to use computing techniques and modern computer devices required in the field of statistics and data science

CLO.6	Students are able to work on projects independently (consultation) and able to write reports and presentations of projects well
CLO.7	Able to communicate effectively and cooperate in interdisciplinary and multidisciplinary teams
CLO.8	Has professional responsibilities and ethics
CLO.9	Able to motivate yourself to think creatively and learn throughout life
MAIN SUBJECT	
<ol style="list-style-type: none"> 1. Anova, regression, experimental design, multivariate analysis, Qualitative Data Analysis, Time Series Analysis, Minitab and SPSS data management review,R 2. Univariate and multivariate data in the form of tables and graphs 3. The estimation of the point and interval of one normal distribution population or not 4. Model regressions (simple, multiple and dummy) as well as test the required assumptions 5. The problem of experimental design (Complete Random Design, Complete Random Block Design, Factorial design for K factors.) 6. Key Component Analysis and Factor Analysis 7. Discriminant Analysis and Cluster Analysis 8. Binary Logistic Regression Analysis 9. Formulate real problems that can be solved by the data analysis method 10. Field studies, and data processing 	
PREREQUISITE	
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REFERENCES	
<ol style="list-style-type: none"> 1. Data analysis and Graphic using R: An example Based approach, Cambrigde Series 2010 2. Modul Ajar Analisis Data II Jurusan Statistika ITS 3. Paket Program SPSS; MINITAB 	