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

Course	Course Name	:	**Regression Analysis**
	Course Code	:	SS234308
	Credit	:	3 SKS
	Semester	:	III

COURSE DESCRIPTION

REGRESSION ANALYSIS is one subject in the field of theory, which aims to master the basic concepts of mathematics to understand the theory of vectors, basic operations of REGRESSION ANALYSIS, determinants, inverses, random vectors, systems of linear equations, vector spaces, values, and eigenvectors. Besides that, students able to use this concept for processing random variables, formulating modeling and calculating univariate and multivariate calculations. To achieve this goal, the learning strategy used is discussion and practice both manually and with a computer program package

PROGRAM LEARNING OUTCOME

PLO-5 Able to apply statistical theory to statistical methods
PLO-7 Able to use modern computing devices to solve statistical problems
PLO-9 Able to apply statistical methods to analyze theoretical and real problems

COURSE LEARNING OUTCOME

CLO.1 Be able to explain concepts and apply the theory of regression analysis
CLO.3 Able to analyze data with the regression method and interpret it
CLO.4 Able to identify, formulate and solve problems in various applied fields with regression analysis

MAIN SUBJECT

1. Parameter estimation and response prediction with one predictor
2. Parameter estimation and response prediction with two or more matrix approach predictors
3. Estimation of regression parameters with quantitative predictors and or qualitative matrix approaches
4. Modeling to overcome heteroscedasticity, overcome unusual observations, and overcome abnormalities
5. Modeling to overcome multicollinearity and selection of the best model
6. Estimation of non-linear regression model parameters

PREREQUISITE

Introduction to Statistical Method

REFERENCES

1. Draper, N. and H. Smith, 1998. Applied Regression Analysis. 2nd edition.
2. Myers, R. H. 1989. Classical and Modern Regression with Applications. Boston: PWS-Kent

Publishing Company.
3. Weisberg, S., 1986. Apllied Linier Regression, John Wiley & Sons, New York.
4. Montgomery, D.C. and Peck, E.A., 1982. Introduction to Linear Regression Analysis. New York: John Wiley and Sons Inc.
5. Engineering Statistics Handbook.