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

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| Course | Course Name | : | **Introduction to Statistical Method** |
| | Course Code | : | SS234103 |
| | Credit | : | 3 SKS |
| | Semester | : | I |

## COURSE DESCRIPTION

Introduction to the Statistical Method is a course that supports the graduate learning outcomes (PLO) of study programs, namely: PLO-4, PLO-5, PLO-7, and PLO-9. After attending this course, students are expected to be able to analyze data and be able to formulate problems into statistical problems and solve with and without the help of computers, especially univariate data, starting from testing 1 population parameters, comparing 2 population parameters, to making a relationship pattern of 2 variables (response and predictors). The learning method used is through face-to-face lectures, discussions, and practice questions. Assignments are given in groups and assessments are carried out through class activities, presentations, making reports and written examinations.

## PROGRAM LEARNING OUTCOME

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| PLO-4 | Able to apply science and mathematics to support the understanding of statistical methods |
| 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

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| CLO.1 | Apply statistical and mathematical theoretical knowledge in the interpretation and presentation of data |
| CLO.2 | Identify, formulate, and analyze data with appropriate statistical methods |
| CLO.3 | Evaluate the problem according to the hypothesis testing procedure |
| CLO.4 | Able to make the right decisions based on analysis of information and data, and able to communicate the results of the analysis both orally and in writing |

## MAIN SUBJECT

1. Understanding the concepts in Statistics: population, sample, parameters, statistics, Descriptive statistics
2. Probability Function
3. Discrete Distribution Function
4. Continuous Distribution Function
5. Estimation and Distribution of Sampling
6. Testing means, variance, and proportion on one population

7. Testing means, variance, and proportion on two population
8. Analysis of Variance (ANOVA)
9. Linear Regression

PREREQUISITE

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REFERENCES


1. Anderson, A., 2015. Statistics for Big Data. For Dummies Publisher.
2. Ang, A.H-S. and Tang, W.H., 2007. Probability Concepts in Engineering: Emphasis on Applications to Civil and Environmental Engineering. 2nd edition. New York: John Wiley and Sons.
3. Freedman, D., Pisani, R., and Purves, R., 2007. Statistics. 4th edition. W. W. Norton dan Company.
4. Johnson, R.A. and Bhattacharyya, G.K., 2014. Statistics: Principles and Concepts. 7th edition. New York: John Wiley and Sons.
5. Walpole, R. E., Myers, R.H., Myers, S.L., and Ye, K.E., 2012. Probability and Statistics for Engineers and Sciences. 9th edition. Boston: Prentice Hall.