

## Statistika

<b>Course Brief Description:</b>	This course will introduce students to the concepts of data presentation, processing data (frequency distribution, histogram and cumulative distribution function), estimation theory, hypothesis testing, ANOVA, correlation and regression, and non-parametric statistics.
<b>Course Learning Objectives:</b>	At the end of the lesson, students are expected to be able to: [1] Knowing the basic concepts of statistics [2] Differentiating descriptive statistics from inferencing statistics [3] Select various methods of testing statistical data [4] Complete the calculation of statistical data either manually or by using a computer program.
<b>Related Expected Learning Outcomes (ELOs):</b>	<ul style="list-style-type: none"><li>• ELO-4: Use quantitative analysis, information technology and critical thinking in agricultural engineering profession.</li></ul>
<b>Teaching Method</b>	<ul style="list-style-type: none"><li>• Lecture</li><li>• In depth discussion</li><li>• Independent assignment.</li></ul>
<b>Grading Policy</b>	<ul style="list-style-type: none"><li>• Quiz and Assignment: 20%</li><li>• Mid Test: 40%</li><li>• Final Test: 40%</li></ul>
<b>Reference</b>	<ul style="list-style-type: none"><li>• Asep Saifuddin, Khairil Anwar Notodipuro, Aam Alamudi dan Kusman Sadik. 2009. Statistika Dasar. PT. Grasindo, Jakarta.</li><li>• Johnson, Robert and Patricia Kuby. 2008. Elementary Statistics 10th Ed. Thomson Brooks/Cole, Belmont, CA.</li><li>• Walpole, R. E. and Raymond H. Myers. 2007. Probability and Statistics for Engineers and Scientists 8th ed. Pearson Prentice Hall. London. (Terjemahan: Pengantar Statistika edisi ke-3. 1993. PT. Gramedia Pustaka Utama, Jakarta.).</li></ul>
<b>Lecturer Name</b>	<ul style="list-style-type: none"><li>• Dr. Ir. Supratomo, DEA</li><li>• Prof. Dr. Ir. Mursalim</li><li>• Prof. Dr. Ir. Junaedi Muhidong, M.Sc</li><li>• Diah Yumeina RD, STP., M.Agr., Ph.D</li></ul>

## Course Outline

Lecture	Topic
1	INTRODUCTION TO STATISTICS
	Basics and terminology
	The importance of statistics
	Descriptive and Inferential Statistics
2	THE NATURE OF DATA AND THEIR COLLECTION
	Collection of Data
	Classification of Data
	Frequency Distribution
	Graphic Representation
3 - 4	DESCRIPTIVE STATISTICS
	Measures of Position
	Measures of Central Tendency
	Measures of Dispersion
	Moments, Skewness and Kurtosis
5	ELEMENTARY PROBABILITY
	Definition of Probability
	The Addition Rules for Probability
	The Multiplication Rules and Conditional Probability
	Permutations
	Combinations
6 - 7	PROBABILITY DISTRIBUTIONS
	Discrete Random Variable
	Continuous Random Variable
	Binomial Random
	Poisson Distribution
	Normal Distributions
	t-Distribution
	Chi-Squared Distribution
8	<b>MID-TEST</b>
9	ESTIMATION
	Point Estimate
	Interval Estimate
	Confidence Interval for the Population Mean
	Confidence Interval for Proporsions
	Confidence Interval for Standard Deviations
10 - 11	HYPOTHESIS TESTING
	Statistical Hypotheses: General Concepts
	Steps in Hypothesis Testing
	Type I and Type II Errors
	One Sample Test
	Two Independent Samples Test
	Two Paired Samples Test
12 - 13	CORRELATION AND REGRESSION

Lecture	Topic
	Linear Correlation Coefficient.
	Inference Concerning the Population Correlation Coefficient
	Linear Regression Model
	Least Squares Method
	Coefficient of Determination
	Prediction in Linear Regression
14 - 15	ANALYSIS OF VARIANCE (ANOVA)
	One-Way ANOVA
	Building One-Way ANOVA Tables
	Completely Randomized Design
	Randomized Block Design
16	<b>FINAL TEST</b>