UNIVERSITAS MATARAM

(University of Mataram)

FAKULTAS TEKNIK

(Faculty of Engineering)

PROGRAM STUDI TEKNIK INFORMATIKA

(Bachelor of Informatics Engineering)

MODULE HANDBOOK DESCRIPTION

Module designation	Statistics and Probability (W22K21)	
Semester(s) in which the module is taught	*2 / second year*	
Person responsible for the module	*Dr. Eng. Budi Irmawati, S.Kom., M.T.*	
Language	*Indonesian*	
Relation to curriculum	*Compulsory*	
Teaching methods	*Assignment, case-based problems, lectures, test*	
Workload (incl. contact hours, self-study hours)	Contact Hours every week, each week of the 16 weeks/semester including Evaluation • 3 x 50 minutes lecturer/week • 3 x 60 minutes class exercise/week • Self Study hours = 180 minutes/week Total workload 510 minutes/week	
Credit points	*2 (~ 4,8 ECTS)*	
Required and recommended prerequisites for joining the module	None	
Module objectives/intended learning outcomes	1. Students know how to work with statistics; know the requirements of data collection and sampling; able to build data visualization.	PLO8: 5%
	2. Students are able to explain how to use probability to build inference machine for advance technology; able to calculate sample, probability, conditional probability, and Bayes theorem.	PLO7: 50%

	3. Students are able to calculate random variable and join probability, able to build probability distribution table and calculate marginal probability; able to calculate expectation value, mean, variance, and covariance for one and multi variable	PLO6: 30%
	4. Students are able to use discreet and continue probabilities.	PLO8: 15%
Content	Statistics and Probability is a basic knowledge for Informatics students to solve problems on processing and data modelling. Students learn data visualization, how to define sample, counting sample space, calculate probability of an event, and learn some data distribution (normal, binomial, hypergeometric, negative binomial, and poison) followed by statistical expectation. Students will have basic understanding about how machine learning works and to solve problems that need data analysis. The course materials are learned by doing visualization using simple python script and solving problems analytically.	
Examination forms	*Assignments, Quiz, Exam*	
Study and examination requirements	*Assignments 50%,* *Quiz 20%,* *Exam 30%*	
Reading list	1. Walpole, R. E., Myers, R. H., Myers, S. L. & Ye, K., "Probability & Statistics for Engineers and Scientists", Ninth Edition, Pearson Education, Upper Saddle River.	