	Universitas Brawijaya **Faculty of Mathematics and Natural Sciences** **Department of Statistics / Bachelor Statistics Study Programme**

Module Handbook		
Module Name:	Statistical Method II (MAS62121)	
Module Level:	Bachelor	
Abbreviation, if applicable:	-	
Sub-heading, if applicable:	-	
Courses included in the module, if applicable:	-	
Semester/term:	2nd / First Year	
Module Coordinator(s):	Nurjannah, S.Si., M.Phil., Ph.D	
Lecturer(s):	Prof. Dr. Ir. Henny Pramoedyo, M.S.	
	Dr. Ir. M. Bernadetha Mitakda	
	Nurjannah, S.Si., M.Phil., Ph.D	
Language:	Indonesian	
Classification within the curriculum:	Compulsory course	
Teaching format / class per week during semester:	2 × 50 minutes + 100 minutes laboratory session	
Workload:	1.67 hours lectures, 2 hours structural activities, 2 hours individual studies for 16 weeks + 1.67 hours laboratory session, 2 hours structural activities, 2 hours individual studies for 8 weeks and total 136 hours per semester 4.50 ECTS	
Credit Points:	3	
Requirements:	Statistical Method I (MAS61121)	
Learning goals / competencies:	**General Competence (Knowledge):**	
	ILO1	The students are able to master basic scientific concepts and statistical analysis methods applied on computing, social science, humanities, economics, industry and life science.
	ILO3	The students are able to manage, analyze, and complete the real case using statistical method on computing, social humanities, economics, industry and life science that helped by software, then present and communicate the results.
	ILO5	The students are able to apply logical, critical, systematic, and innovative thinking independently when applied to science and technology that contain humanities values, based on scientific principles, procedures and ethics with excellent and measurable results.

	ILO6	The students are able to take appropriate decisions to solve the problems expertly, based on the information and data analysis.
	ILO8	The students are able to apply and internalize the spirit of independence, struggle, entrepreneurship, based on values, norms, and academic ethics of Pancasila in all aspects of life.
	Specific Competence:	
	M1	Students are able to explain the basic understanding of inferential statistics and their uses (ILO1 and ILO5)
	M2	Students are able to do interval estimator analysis for a population mean for 2 populations (ILO1, ILO3, ILO5, ILO6, and ILO8).
	M3	Students are able to understand the basics of hypothesis testing (ILO1, ILO3, ILO5, ILO6, and ILO8).
	M4	Students are able to prepare and test the hypothesis of 1 population that has binomial and normal distribution using t-test and draw conclusions (ILO1, ILO3, ILO5, ILO6, and ILO8).
	M5	Students are able to prepare and test the hypothesis of 2 populations of binom distribution using t-test and the independent normal distribution using the independent t-test and draw conclusions (ILO1, ILO3, ILO5, ILO6, and ILO8).
	M6	Students are able to do 1-way classification analysis and 2-way classification analysis (ILO1, ILO3, ILO5, ILO6, and ILO8).
	M7	Students are able to do regression analysis, correlation and nonparamateric analysis and interpret based on the results of the analysis (ILO1, ILO3, ILO5, ILO6, and ILO8).
Contents:	1	Basic definition of inferential statistics
	2	Interval estimation of 2 populations with discrete distribution
	3	Interval estimation of 2 populations with independent continuous distribution
	4	Interval estimation of 2 populations with conditional continuous distribution
	5	Basics of hypothesis testing
	6	Testing hypothesis of one population with binomial distribution

	7	Testing hypothesis of one population with normal distribution
	8	Testing hypothesis of two population with binomial distribution
	9	Testing hypothesis of two population with independent normal distribution
	10	Testing hypothesis of two population with conditional normal distribution
	11	One-way Analysis of Variance
	12	Two-way Analysis of Variance
	13	Regression and correlation analysis
	14	Non-parametric statistical analysis
Soft skill attribute:	Responsible, independently, and discipline	
Study/exam achievement:	Final score (NA) is calculated as follow: 5% Attitude, 20% Laboratory Session, 10% Assignments, 15% Quizzes, 20% Midterm Exam, 30% Final Exam Final index is defined as follow: A : > 80 - 100 B+ : > 75 - 80 B : > 69 - 75 C+ : > 60 - 69 C : > 55 - 60 D+ : > 50 - 55 D : > 44 - 50 E : 0 - 44	
Forms of media:	Software (Minitab, SPSS, Genstat), LCD projector, whiteboard	
Learning methods:	Lecture, assessments, and discussion	
Literature:	Main:	
	1. Suntoyo Yitnosumarto, 1990. Dasar-dasar Statistika. Rajawali pers. Jakarta.	
	2. Walpole, R. E. 1993. Pengantar Statistika. Edisi 3. PT. Gramedia Pustaka Utama	
	Support:	
	1. Feller, W., 1983. An introduction to probability theory and its applications, vol I dan II. Wiley Eastern Ltd. New Delhi	
	2. Hogg. R. V. Dan Craig, A. T., 1978. Introduction to mathematical statistics, edisi ke 4, John Wiley & Sons. New York	
	3. Steel. R. G. D dan Torrie. J. H., 1976. Introduction to statistics. McGraw-Hill Book Co., New York	

	4. Snedecor, G. W. Dan Cochran, W. G., 1967. Statistical methods, edisi ke 6. The Iowa State University Press, Ames
	5. Siegel, S. 1956. Non parametric statistics, McGraw-Hill Kogakushs. Ltd. Tokyo.
	6. ,----------, 1990. Percobaan: perancangan analisis dan interpretasinya. Gramedia. Jakarta
Notes:	