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

Module Handbook		
Module Name:	Computational Statistics (MAS61132)	
Module Level:	Bachelor	
Abbreviation, if applicable:	-	
Sub-heading, if applicable:	-	
Courses included in the module, if applicable:	-	
Semester/term:	5th / Third Year	
Module Coordinator(s):	Dr. Adji Achmad Rinaldo Fernandes, S.Si, M.Sc	
Lecturer(s):	Dr. Adji Achmad Rinaldo Fernandes, S.Si, M.Sc	
	Dr. Eni Sumarminingsih, S.Si., M.M.	
	Achmad Efendi, S.Si., M.Sc., 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 (MAS62121), Basics of Programming (MAS61131)	
Learning goals / competencies:	**General Competence (Knowledge):**	
	ILO4	The students are able to master at least two statistical softwares, including based on open source.
	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.
	Specific Competence:	
	M1	Students are able to have knowledge and structure and algorithm skills of statistics program package. (ILO4, ILO5)

	M2	Students are able to process and analyze data using existing program package.
	M3	Students are able to develop program package that do not yet exist with the help of macro computer (syntax)
Contents:	1	Macros (syntax) in Minitab and R: structures of Minitab and R macro
	2	Input data and type data command, arithmetic operation of vector and matrix
	3	Build macro (syntax) for discrete and continue distribution
	4	Build macro (syntax) for hypothesis testing and ANOVA
	5	Build macro (syntax) for regression and time series analysis
	6	Build macro (syntax) for significance test of parameter and hypothesis testing
	7	Build macro (syntax) for goodness of fit
Soft skill attribute:	Responsible, independently, and discipline	
Study/exam achievement:	Final score (NA) is calculated as follow: 20% Assignments, 20% Quizzes, 30% 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 (R, Minitab), Laptop, LCD projector, whiteboard	
Learning methods:	Lecture, assessments, and discussion	
Literature:	Main:	
	1. Dalgaard, P. 2002. Introductory Statistics with R. Springer-Verlag New York Inc.	
	Support:	
	1. Maindonald. 1984. Statistical Computation. Wiley. USA	
	2. Minitab, Inc. 1994. Minitab Reference Manual Release 10.2 For Windows. Minitab Inc, USA	
Notes:		