



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

**Module Handbook**

Module Name:	Scientific Research and Writing Method (MAS62124)	
Module Level:	Bachelor	
Abbreviation, if applicable:	-	
Sub-heading, if applicable:	-	
Courses included in the module, if applicable:	-	
Semester/term:	6th / Third Year	
Module Coordinator(s):	Dr. Adji Achmad Rinaldo Fernandes, M.Si	
Lecturer(s):	1. Dr. Ir. Solimun, M.S. 2. Prof. Ir. Waego Hadi Nugroho, Ph.D.	
Language:	Indonesian	
Classification within the curriculum:	Compulsory course	
Teaching format / class per week during semester:	2 × 50 minutes	
Workload:	1.67 hours lectures, 2 hours structural activities, 2 hours individual studies, 16 weeks per semester, and total 90.67 hours per semester 3 ECTS	
Credit Points:	2	
Requirements:	≥ 90 credit points	
Learning goals / competencies:	<b>General Competence (Knowledge):</b>	
	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.
	ILO2	The students are able to arrange and/or choose an efficient data collection/ data generated design that applies in surveys, experiments or simulations.
	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.
	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.
	ILO6	The students are able to take appropriate decisions to solve the problems expertly, based on the information and data analysis.
	ILO7	The students are able to improve and develop a job networks, then supervise and evaluate the team's performance they lead.
	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.
	<b>Specific Competence:</b>	
	M1	Students are able to think scientifically, critically, analytically, and are able to differentiate research and not research (ILO1, ILO3).
	M2	Students are able to understand about process, outline, and formulate the steps of research (ILO5, ILO6).
	M3	Students are able to compile research background including problem writing, problem formulation, and literature review, searching the theoretical basis of the research problem, looking for some solutions (models) of research problems (ILO4, ILO8).
	M4	Students are able to make proposals consisting of introduction, literature review, and determination of analytical methods, making simple research in accordance with the topic of statistics (ILO2, ILO4).
	M5	Students are able to analyze and interpret the results of research, write in scientific papers (thesis) as a requirement to get a bachelor of statistics, write a paper that is published in scientific journals (ILO1, ILO3, ILO4, ILO7).
Contents:	1	The term of philosophy and research as well as trial and error
	2	Systematic research in statistics, formulation of research problems, research purposes, research methods and analysis, weaknesses about prior research and find the alternative models

	3	Methods in compiling introduction, problems that must be included in the introduction of literature review and determine some alternative methods of analysis and statistical models
	4	The selection of data and several alternative methods, alternative analysis
	5	Model selection and interpretation and procedures for writing a final project
	6	The procedures for writing scientific papers in the form of a final project, the procedures for writing in papers that will be published in scientific journals
	7	Plagiarism issues, and selection of scientific magazines as publishing papers
Soft skill attribute:	Responsible, independently, and discipline	
Study/exam achievement:	<p>Final score (NA) is calculated as follow: 20% assignments, 40% Quizzes, 20% Midterm Exam, 20% Final Exam</p> <p>Final index is defined as follow:</p> <p>A : &gt; 80 - 100</p> <p>B+ : &gt; 75 - 80</p> <p>B : &gt; 69 - 75</p> <p>C+ : &gt; 60 - 69</p> <p>C : &gt; 55 - 60</p> <p>D+ : &gt; 50 - 55</p> <p>D : &gt; 44 - 50</p> <p>E : 0 - 44</p>	
Forms of media:	Laptop, LCD projector, whiteboard	
Learning methods:	Lecture, assessments, and discussion	
Literature:	<b>Main:</b>	
	1. Govindaraju, V., Raghavan, V., and Rao, C.R. 2015. Big Data Analytics, 1st . Elsevier.	
	2. Dietrich, D., Heller, B., Yang, B. .2015. Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data. EMC Education Services. John Wiley & Sons, Indianapolis, Indiana.	
	<b>Support:</b>	
	1. Hurwitz, J., Nugent, A., Halper, F., Kaufman, M. 2013. Big Data For Dummies. John Wiley & Sons, Inc. Hoboken, New Jersey.	
Notes:		