

## **Master Program in Statistics (MPS)**

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Module name Nonparametric Statistics Master's degree in 2<sup>nd</sup> year Module level, if applicable Code, if applicable MST-512 Semester(s) in which the 3<sup>rd</sup> (third) module is taught Person responsible for the Rohmatul Fajriyah, Dr. techn. module Akhmad Fauzy, Prof. Ph.D Lecturer Rohmatul Fajriyah, Dr. techn. Bahasa Indonesia Language Relation to curriculum Compulsory course in the first year (1st semester) Master Degree Types of Class size Attendance time Form of active Workload teaching and participation (hours per week (hours per semester) learning per semester) Interactive < 20 2.5 Problem solving Face to face 35 Lecturing teaching Structured 48 activities Independent study 48 5 Exam Total Workload 136 hours Credit points 3 CUs / 5.1 ECTS Minimum attendance at lectures is 75%. Final score is evaluated based Requirements according to the examination regulations on quiz, assignment, mid-term exam, and final exam. Recommended prerequisites Theory and Applied Statistics Related course After completing this course, the students have ability to: CO 1. integrate the concepts and implementation of Nonparametrics statistical methods to solve statistical problems and their applications Module objectives/intended CO 2. identify, formulate and analyze statistical problems and their learning outcomes application to existing data. CO 3. create program in R/Python programming language for nonparametrics statistics analysis, simulation and its visualization 1. Bootstrap and Jack-knife 2. Wavelet 3. LASSO dan Elastic Net 4. Smoothing or estimating curves Content 5. Permutation test 6. Rank-based Linear Regression 7. Non-linear regression 8. Nonparametric Regression



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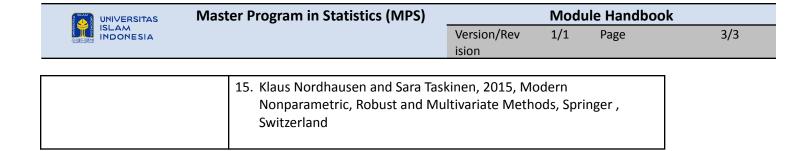
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The final mark will be weighted as follows: Assessment No Weight (percenta Assessment types components 1 40% CO 1 Assignment, Quiz, Midterm Study and examination Exam requirements and forms of 2 CO 2 Assignment, Quiz, Final 20% examination Exam 3 CO<sub>3</sub> Assignment, Quiz, Final 40% Exam Google Classroom, relevant websites, slides (power points), video, Media employed interactive media, white-board, laptop, LCD projector 1. Jeffrey Racine, Liangjun Su and Aman Ullah, 2014, The Oxford Handbook of Applied Nonparametric and Semiparametrics Econometrics and Statistics, Oxford University Press 2. Gregory W. Corder and Dale I Foreman, 2014, Nonparametric Statistics: A Step by Step Approach, Wiley 3. Victor Patrangenaru and Leif Ellingson, 2015, Nonparametric Statistics on Manifolds and Their Applications to Object Data Analysis, CRC Press 4. Jayant V. Deshpande, Uttara Naik-Nimbalkar and Isha Dewan, 2017, Nonparametric Statistics: Theory and Methods, World Scientific Publishing Co 5. Kolassa, John Edward, 2020, An Introduction to Nonparametric Statistics, CRC Press 6. Odile Pons, 2013, Statistical Tests of Nonparametric Hypotheses: Asypmtotic Theory, World Scientific Publishing Co Reading list 7. Rajesh Kumar Arora. 2015. Optimization: Algorithms and Applications. CRC Press (Taylor and Francis Group). 8. Steffen Lauriotzen, 2023, Fundamentals of Mathematical Statistics, Chapman and Hall 9. Fajriyah, R, 2024, Seri Komputasi R; Statistika Nonparametrik Elementer, UII, Yogyakarta 10. Larry Wasserman, 2006, All of Nonparametric Statistics, Springer, New York 11. Peter Sprent, 2011, Applied Nonparametric Statistical Methods, CRC Press, Florida 12. AC Davison, and DV Hinkley, 1997, Bootstrap Methods and their Application, Cambridge University Press, USA 13. Silvelyn Zwanzig and Behrang Mahjani, 2020, Computer Intensive Methods in Statistics, CRC Press, Florida 14. Geof H Givens and Jennifer A. Hoeting, 2013, Computational Statistics, John Wiley, New Jersey



Date:	Date:	Date : Sept 5, 2024
Authorized by Head of Study	Examined by Coordinator of Cluster	Prepared by Lecturer/Coordinator of
Program:	Interest	Lecturers:
Rohmatul Fajriyah	Akhmad Fauzy, Prof. Ph.D	Rohmatul Fajriyah