



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Mathematics Department

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Undergraduate Program in Statistics

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MODULE HANDBOOK

Module name	Komputasi Statistika II dan Praktikum (Statistical Computation II and Lab session)
Module level, if applicable	Bachelor
Code, if applicable	MMS-3442
Subtitle, if applicable	
Courses, if applicable	
Semester(s) in which the module is taught	5/third year
Person responsible for the module	Prof. Dr. rernat. Dedi Rosadi, S.Si., M.Sc.
Lecture(s)	Prof. Dr. rernat. Dedi Rosadi, S.Si., M.Sc.
Language	Bahasa Indonesia
Classification within the Curriculum	compulsory/elective
Teaching format /class hours per week during the semester:	2 hours lecture and 2 hours laboratory session
Workload	2 hours lecture, 2 hours laboratory session, 8 hours individual study, 14 weeks lecture per semester, 12 weeks laboratory session per semester, and total 156 hours a semester
Credit points	3
Requirements	MMS-2422 Komputasi Statistika II (Statistical Computation II)
Module objectives/intended learning outcomes	After completing this course, the students will be able to: CO1 Have advanced skill to do statistical programming in some fields of application CO2 understand and be able to apply various statistical methods using real data in some fields of application, do necessary computation using statistical software and interpret the output
Content	This course is continuation of the topics discussed in Statistical computation 1. We introduce some advanced methods in programming using R, and study various application of the statistical computing in some field of studies. Some advanced topic studied including: bootstrap, linear programming, unconstrained optimization, constrained optimization, genetic algorithms, application statistical computing for algebra, introduction to big data analytics, some real projects
Study and xamination requirements and forms of examination	The weight of assignments will be as follows: i. Quiz, homework 15% ii. Mid semester exam 40% iii. Final exam/Final Project 45% Grade scale: A 85 ≤ score A/B 75 ≤ score < 85 B 65 ≤ score < 75 B/C 55 ≤ score < 65 C 45 ≤ score < 55 D 20 ≤ score < 45 E score < 20
Media employed	Slides and LCD projectors, whiteboard

Reading List	<ol style="list-style-type: none"> 1. Gentle, J.E., 2002, Elements of Computational Statistics, Springer, New York 2. Witten, D., James, G. , Tibshirani, R. and Hastie, T., 2013 , An Introduction to Statistical Learning with Applications in R, Springer, New York
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Program Learning Outcomes (PLO)

PLO-1 have strong basic statistics and mathematics in problem solving analysis.

PLO-2 have statistical thinking and able to develop.

PLO-3 have a good ability to utilize technology and statistical software in teaching and research.

PLO-4 have experience in working on real cases in the field of statistics.

PLO-5 have a good ability to communicate statistics in writing and oral.

PLO-6 have ability to further studies, and or lifelong learning.

PLO-7 have professional ethics and soft skill.

CO and PLO mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
CO 1	x	x	x	x	x		
CO 2			x	x	x	x	x