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MODULE HANDBOOK

Module name	Pengantar Analisis Runtun Waktu dan Praktikum (Introduction to Time Series Analysis and Lab session)
Module level, if applicable	Bachelor
Code, if applicable	MMS-3429
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:	2/1 hours lecture
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	2/1
Requirements	MMS-2420 Introduction to Mathematical Statistics I
Module objectives/intended learning outcomes	By the end of this course, the student should be able to CO1 Students are understand basic concept for time series analysis CO2 Students are able to understand the theoretical properties of some stationary univariate models such as ARMA models and non-stationary models, such as ARIMA, SARIMA, ARCH/GARCH CO3 Students are able to model the data using time series model, with the help of statistical software, such as R, Eviews, or others
Content	Topics include basic concepts, such as: Stochastic process, the auto covariance and the auto correlation function (ACF), the partial ACF (PACF), strictly and wide-sense stationary, causality and invertibility; Estimating the mean, ACF and PACF; Some stationary models (White noise, Moving Average/MA, Autoregressive/AR, ARMA), Estimation and forecasting stationary models, Diagnostic check methods, some non stationary model: ARIMA, SARIMA, ARIMAX and ARCH/GARCH, Short overview of the other models
Study and examination 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 45% Grade scale: A $85 \leq$ score A/B $75 \leq$ score < 85 B $65 \leq$ score < 75 B/C $55 \leq$ score < 65 C $45 \leq$ score < 55

	D $20 \leq$ score < 45 E score < 20
Media employed	Slides and LCD projectors, whiteboard
Reading List	Abraham, B. and Ledolter, J., Statistical Methods for Forecasting, Wiley, 1983 Brockwell, P.J. dan Davis, R.A., 1996, Introduction to Time Series and Forecasting, Springer Verlag, Berlin Enders, W., 2004, Aplied Econometric Time Series, Wiley Gourieroux, C., 1997, ARCH Models and Financial Applications, Springer-Verlag. Makridrakis, W., 1999, Metode dan Aplikasi Peramalan, Second Edition, Binarupa Aksara. Rosadi, D., 2013, Analisa runtun waktu, GAMA PRESS Quantitative Micro Software, LLC, 2001, Eviews 4 User's Guide, Quantitative Micro Software Verbeek, M., 2000, A Guide to Modern Econometrics, John Wiley

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	
CO 2	x	x		x		x	
CO 3			x	x	x	x	x