Graduate Program in Mathematics

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MODULE HANDBOOK

Module Name	Metode Statistika Aktuaria (Statistical method for Actuarial Science)
Module level, if applicable	Master Program
Code, if applicable	MMS-5506
Subtitle, if applicable	-
Courses, if applicable	-
Semester(s) in which the module is taught	2/first year
Person responsible for the module	Chair of Statistics Laboratory
Lecturer(s)	Prof., Dr.rer.nat., Dedi Rosadi, S.Si., M.Sc.
Language	Bahasa Indonesia
Relation to curriculum	Elective for Master Degree in Mathematics
Teaching methods	3 hours lecture
Workload (incl. contact hours, self-study hours)	3 hours lectures, 6 hours individual study,14 weeks per semester, and total 126 hours per semester
Credit points	3
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	On successful completion of this course, ● CO Students should understand the basic statistical properties, be able to estimate and understand the properties of the estimator from various econometrics and time series model for modeling actuarial data ● CO2 Students can understand the modeling steps of various econometrics and time series models for modeling actuarial data ● CO3 Students can model the actuarial data using various econometrics and time series models, with the help of econometrics software, such as R, Eviews, or others
Content	Introduction to regression analysis, simple regression, multiple regression (estimator, properties of the estimator, test for the classical assumptions, statistical inference for the estrimator), Regression with dummy variables, Regression with stochastic independent variables, Serial correlation and heteroscedasticity within the regression model, Generalized Least Square (GLS) Estimator and its properties, Extrapolation and smoothing of time series data using deterministic models, modeling seasonality of time series data, modeling time series data using stationary and stationary model (random walk, AR, MA, ARMA, ARIMA), application of the model using some econometrics software
Examination forms	Written exams and final project
Study and examination requirements	The weight of assignments will be as follows: 1. Quiz, home work, presentation 20% 2. Mid semester exam 40% 3. Final exam 40%
Media employed	online platform, Learning management system, LCD projectors, whiteboards.
Reading list	Pindyck, R.S. and Rubinfeld,D.L., 1998, Econometric Models and Economic Forecasts (Fourth Edition), MC Graw Hill, Boston. Chapters 3–6, 15–18. Rosadi, D., 2011, Analisa Ekonometrika dan Runtun Waktu Terapan dengan R, Andi Ofset, Yogyakarta Rosadi, D., 2013, Ekonometrika dan Analisa Runtun Waktu Terapan dengan EViews, Andi Ofset, Yogyakarta Gujarati,D., 2004, Basic Econometrics,4th Eds., Mc. Graw Hill, New York

CO-PLO Mapping

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

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