



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Mathematics Department

Sekip Utara Bulaksumur Yogyakarta 55281 Telp: +62 274 552243 Fax: +62 274 555131 Email: math@ugm.ac.id Website: matematika.fmipa.ugm.ac.id

Doctoral Program in Mathematics

Telp : +62 274 552243

Email : maths3@ugm.ac.id;

Website : <http://math.fmipa.ugm.ac.id/dpmath>

MODULE HANDBOOK
Doctoral in Mathematics

Module name:	Time Series Data Forecasting
Module level, if applicable:	Doctoral Program
Code, if applicable:	MMM 5425
Semester(s) in which the module is taught:	First year
Person responsible for the module:	Chair of Statistics Research Group
Lecturer(s):	Dr. Herni Utami, M.Si.
Language:	Indonesia
Relation to curriculum:	Doctoral Degree in Mathematics, Compulsory / Elective Course
Credit points:	3 Semester Credit Unit
Type of teaching, contact hours:	3x50 minutes lectures, 3x60 minutes structured activities.
Workload:	<ul style="list-style-type: none"> • 3x50 minutes lectures, • 3x60 minutes structured activities, • 3x60 minutes individual study, • In 16 weeks per semester (including assignments and examinations)
Recommended prerequisites:	Students have learned exponential smoothing, decomposition, ARIMA methods.
Module objectives/intended learning outcomes:	On successful completion of this course, students should be able to: CO 1: Construct forecasting model CO 2: Predicts data using suitable forecasting method CO 3: Compares some forecasting methods
Content:	Stationarity, ARIMA model, some advanced forecasting methods
Study and examination requirements and forms of examination:	<p>The final mark will be weighted as follows:</p> <p>No Assessment methods (components, activities) Weight (percentage)</p> <p>1 Final Examination 35%</p> <p>2 Mid-Term Examination 30%</p> <p>3 Projects/Presentation 25%</p> <p>4 Peer Assessment/Quiz 10%</p> <p>Final grade will be determined as follows:</p> <p>Grade Criteria</p> <p>The initial cut-off points for grades A, B, C, and D should not be less than 80%, 65%, 50%, and 40%, respectively.</p>
Media employed:	Board, LCD Projector, Laptop/Computer
Reading List:	<ol style="list-style-type: none"> 1. Brockwell, P.J., Davis, R.A., 1991, Time Series: Theory and Methods, Springer. 2. Makridakis, S., Wheelwright, S.C., and Hyndman, R.J., 1998, Forecasting: Method and Application, John Wiley & Sons

	3. Hyndman, et al., 2008, Forecasting with Exponential Smoothing, Springer, German.
--	---

Mapping of The COs and PLOs

	PLO - 1 S3 Mat	PLO - 2 S3 Mat	PLO - 3 S3 Mat	PLO - 4 S3 Mat	PLO - 5 S3 Mat	PLO -6 S3 Mat
CO 1		√				
CO 2			√			
CO 3					√	

Programme Learning Outcomes (PLO) Doctoral Programme in Mathematics

PLO-1	:	Attitude: Devote to God Almighty, uphold the humanity values, internalize academic values and ethics, responsible in working in the area of expertise independently.
PLO-2	:	Knowledge: Mastering philosophy of mathematics and one of the fields in mathematics (algebra, analysis, applied mathematics, statistics, computational mathematics, computational statistics).
PLO-3	:	Knowledge: Able to think logically, analytically, inductively, deductively, and structured; having the ability to manage, lead, and develop research programs independently, and able to communicate the thoughts as well as his work to the scientific community and the general public.
PLO-4	:	Skill: Creating new concepts and / or new methods (original) in the field of mathematics that are recognized nationally and internationally.
PLO-5	:	Skill: Able to apply mathematics according to their field of expertise to solve problems including those that require a multidisciplinary, cross-disciplinary, or trans-disciplinary approach.
PLO-6	:	Life Long Learning: Having lifelong learning skills and adaptive to the development of science and technology, especially in fields related to Mathematics and its applications.