Module designation	*Time Series Analysis*
Semester(s) in which the module is taught	*6*
Person responsible for the module	*Dr. Dhoriva Urwatul Wutsqa, M.S.*
Language	*Bahasa Indonesia*
Relation to curriculum	*Elective course*
Teaching methods	*150 minutes lectures and 180 minutes structured activities per week.*
Workload (incl. contact hours, self-study hours)	*Total workload is 136 hours per semester which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes self-study per week for 16 weeks.*
Credit points	*3*
Required and recommended prerequisites for joining the module	*MAT6326 - Introduction to Regression Analysis*
Module objectives/intended learning outcomes	*"Students know that/know how to/are able to* *CO1: Respect other people's opinions regardless of ethnicity, race, and religion.* *CO2: Communicate ideas related to concepts, methods, and time series data analysis verbally and in writing* *CO3: Explain the basic concepts and data analysis methods of time series* *CO4: Analyze time series data with appropriate analysis methods and conclude the results.* *CO5: Use statistical programs especially MINITAB or Matlabto analyze time series data*
Content	*This course discusses: (1) the basic aspects of forecasting; (2) basic statistical concepts; (3) data patterns of time series, trend, seasonal data, cyclicalseries, and other irregular fluctuations;(4) the concepts of autocorrelation, stationary, and white noise; (5) moving average and smoothing methods; (6) time series decomposition; (7) regression with time series data; (8) ARIMA method (Autoregressive Integrated Moving Average); and(9) neural network model for time series data.*
Examination forms	*CO1: Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude.*

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<td>Study and examination requirements</td>
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The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.

The final mark will be weight as follow:
<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO 1</td><td>a. Presentation
b. Discussion</td><td>Observation</td><td>5%
10%</td></tr>
<tr><td>2</td><td>CO2, CO3, CO4, CO5</td><td>a. Individual assignment
b. Presentation
c. Mid-Term Examination
d. Final Examination</td><td>Observation
Written test</td><td>20%

20%
30%

30%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
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<td>Reading list</td>
<td>
1. Hanke, J. E. & Wichern, DW. 2005. Business forecasting. New Jersey: Pearson Prentice-Hall.
2. Wei, WWS., 2006, Time series analysis. Boston: Pearson Education.
3. Fausett, L. 1994.Fundamentals of neural networks: Architecture, algorithms, and applications. New Jersey, NJ: Prentice Hall.
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