Module designation	*Data Analysis and Visualization*
Semester(s) in which the module is taught	*2*
Person responsible for the module	*Thesa Adi Saputra Yusri M.Cs.*
Language	*Bahasa Indonesia*
Relation to curriculum	*Compulsory 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	*FMI6202 Statistics*
Module objectives/intended learning outcomes	*CO1 Demonstrate mutual respect for freedom of religion, culture, and opinion.* *CO2 Communicate original ideas for solving data analysis and visualization problems both in writing and orally.* *CO3 Understand the concepts of data analysis and data visualization.* *CO4 Use linear models in data analysis.* *CO5 Analyze and visualize data.*
Content	*This course covers an introduction to R, chi-square tests for univariate categorical data, chi-square tests for bivariate categorical data, simple linear regression, multiple linear regression, one-way analysis of variance, two-way analysis of variance, the basics of data manipulation, data manipulation, combining multiple data frames, data cleaning, visualization of categorical data, visualization of continuous data, simultaneous visualization of categorical and continuous data, and map visualization.*
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>CO 2, CO 3, CO 4</td><td>a. Individual assignment
b. Group assignment
c. Quiz
d. Midterm
e. Final test</td><td>Written</td><td>10%
10%
20%
20%
25%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
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<td>Reading list</td>
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1. Dalgaard, P. (2008). Introductory statistics with R. New York: Springer.
2. Abedin, J., & Das, Kishor K. (2015). Data manipulation with R 2nd edition. Birmingham: Packt Publishing.
3. Kokoska, S. (2015). Introductory statistics: a problem-solving approach. New York: W.H. Freeman & Company.
4. Kassambara, A. (2013). Guide to create beautiful graphics in R. Marseille: STDHA.

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