

Module designation	IS388 Data Analysis		
Semester(s) in which the module is taught	7		
Person responsible for the module	Raymond Sunardi Oetama Tan Thing Heng		
Language	Indonesia		
Relation to curriculum	Elective 1		
Didactic methods	<ul style="list-style-type: none"> <li>- Lecture</li> <li>- Problem Based</li> <li>- Demonstration</li> <li>- Hands-On</li> </ul>		
Workload (incl. contact hours, self-study hours)	<p>Total workload: 181.44 hours</p> <p>Theory</p> <ul style="list-style-type: none"> <li>- 23.34 hours of synchronous lecture.</li> <li>- 56.04 hours of Self-study and assignments</li> <li>- 11.34 hours related to exam and self study</li> </ul> <p>Lab</p> <ul style="list-style-type: none"> <li>- 46.70 hours of lab module (and in-class assistance)</li> <li>- 32.68 hours of self-lab and assignments</li> <li>- 11.34 hours related to exam and self study</li> </ul>		
Credit points	4 SKS (6.72 ECTS)		
Required and recommended prerequisites for joining the module	<p>Required:</p> <ul style="list-style-type: none"> <li>- CE319 Probability &amp; Statistics</li> </ul>		
Module objectives/intended learning outcomes	Course Learning Outcome	Related ELOs	
		ELO	Performance Indicator
	Students can use R programming for data analysis.	I	Ability to develop and integrate software and hardware as scalable distributed systems that incorporate various device types for the purpose of solving engineering problems.
Content	This course is given to discuss popular forms of business data analysis following the Big Data era. Students will be able to observe the data, look for patterns from the data that show the		

	<p>condition of a company. Then students conduct discussions and experiments to find new solution models that will later be useful for students' competitive ability of a company.</p> <p>Specifically, this course contains these topics:</p> <ol style="list-style-type: none"> <li>1. Big Data Analysis</li> <li>2. Exploratory Data Analysis</li> <li>3. Clustering</li> <li>4. Classification</li> <li>5. Linear models</li> <li>6. Time series</li> <li>7. Text Analysis</li> <li>8. Association rules</li> <li>9. Case studies</li> <li>10. Data analysis project</li> </ol>
Examination forms	Portfolio
Study and examination requirements	The total average score for the assignments (30%), midterm (20%), and final (50%) exams must be more than or equal to 55 (C).
Reading list	<p>Main:</p> <ol style="list-style-type: none"> <li>1. EMC Education Services. Data Science &amp; Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data. Wiley (2014).</li> <li>2. Program R (Rdatamining.com)</li> </ol> <p>Supporting:</p> <ol style="list-style-type: none"> <li>1. Jurnal Infosys Guidelaine (<a href="http://ejournals.umn.ac.id">ejournals.umn.ac.id</a>)</li> </ol>