



**INSTITUT TEKNOLOGI SEPULUH NOPEMBER
FACULTY OF SCIENCE AND DATA ANALYTICS
DEPARTMENT OF STATISTICS
STATISTICS UNDERGRADUATE PROGRAM**

Course

Course Name	:	Business Analytics
Course Code	:	SS234747
Credit	:	3 SKS
Semester	:	VII

COURSE DESCRIPTION

The Business Analytics course is expected to be able to answer the need for presenting information in a fast time in today's internet era. The current digital era makes data available in large volumes with various types of data, either free of charge (on the internet) or not. This makes the method of presenting data very important, especially when it is related to the speed (time required) in presenting the information. The material in the Business Analytics course will provide provisions for students to have the ability and skills in online data collection, data visualization, analysis and reports in the form of documents and dashboards. The results of the information obtained will be used as material for business decision making and other related matters.

PROGRAM LEARNING OUTCOME

- PLO-7 Able to use modern computing devices to solve statistical problems
- PLO-9 Able to apply statistical methods to analyze theoretical and real problems
- PLO-10 Able to apply business, industrial, economic, social, health or environmental statistical methods to real problems

COURSE LEARNING OUTCOME

- CLO.1 Produce data visualization with traditional and up-to-date methods
- CLO.2 Generate visualizations for time series, spatial, and spatial-temporal data
- CLO.3 Can collect data from the digital world and analyze it
- CLO.4 Can document data and generate reports
- CLO.5 Can make a dashboard as a decision support tool
- CLO.7 Able to communicate effectively and work together in interdisciplinary and multidisciplinary teams
- CLO.8 Have professional responsibilities and ethics
- CLO.9 Able to motivate yourself to think creatively and learn throughout life

MAIN SUBJECT

1. Presentation of data (especially business, economic and financial data) in graphs using traditional methods
2. Presentation of data (especially business, economic and financial data) in graphs using a grid system
3. Presentation of data using Graphic Engine
4. Presentation of data using Graphic Package
5. Time Series Data Visualization
6. Spatial Data Visualization

7. Spatio-Temporal Data Visualization
8. Data Wrangling and Visualization
9. Web Analytics
10. Create documentation using R Markdown and knitr
11. Create a Website application using R Shiny
12. Create a dashboard

PREREQUISITE

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REFERENCES

1. Beeley, Chris. 2013. Web Application Development with R Using Shiny. Birmingham: Packt Publishing.
2. Lamigueiro, Oscar Perpiñán. 2014. Displaying Time Series, Spatial, and Space-Time Data with R. Boca Raton: CRC Press.
3. Murrell, Paul. 2012. R Graphics. 2nd edition. Boca Raton: CRC Press.
4. Putler, Daniel S. and Krider, Robert E. 2012. Customer and Business Analytics: Applied Data Mining for Business Decision Making Using R. Boca Raton: CRC Press.
5. Wickham, Hadley and Grolemund, Garrett. 2016. R for Data Science: Import, Tidy, Transform, Visualize, and Model Data. CA: O'Reilly Media, Inc.
6. Williams, Graham J. 2017. The Essentials of Data Science: Knowledge Discovery Using R. Boca Raton: CRC Press.
7. Xie, Yihui. 2015. Dynamic Documents with R and knitr. 2nd edition. Boca Raton: CRC Press.