

## Course Descriptions None 2020-2021

Course Title Knowledge Discovery and Data Visualization  
 Course Code EBC1045  
 ECTS Credits 6,5  
 Assessment Whole/Half Grades

| Period | Start      | End        | Mon | Tue | Wed | Thu | Fri |
|--------|------------|------------|-----|-----|-----|-----|-----|
| 2      | 26-10-2020 | 11-12-2020 |     | X   |     | X   |     |

Level no level  
 Coordinator Roselinde Kessels For more information:r.kessels@maastrichtuniversity.nl  
 Language of instruction English

Goals

- \* Students understand data preparation, modelling, data mining algorithms and visualization techniques within the Cross-Industry Standard Process for Data Mining.
- \* Starting from a messy database, students prepare the data for mining, apply modeling and visualization techniques and interpret the results for business cases.
- \* Students provide arguments why certain techniques within the Cross-Industry Standard Process for Data Mining are more suitable than others for specific data situations.
- \* Students evaluate the statistical appropriateness of different modelling techniques using model evaluation techniques and reflect upon the results.
- \* Students understand the importance and impact of modern data-driven technologies to different business industries and institutions.
- \* Students understand the ethical principles of objectivity, carefulness and respect for data privacy regulations.
- \* Students write reports including appropriate visualizations, deliver presentations and discuss the results in teams.
- \* Students know how to be self-reliant and self-sustaining when learning and implementing statistical methodologies that are new to them.
- \* Students collaborate and brainstorm in intercultural teams.

Description

PLEASE NOTE THAT THE INFORMATION ABOUT THE TEACHING AND ASSESSMENT METHOD(S) USED IN THIS COURSE IS WITH RESERVATION. THE INFORMATION PROVIDED HERE IS BASED ON THE COURSE SETUP PRIOR TO THE CORONAVIRUS CRISIS. AS A CONSEQUENCE OF THE CRISIS, COURSE COORDINATORS MAY BE FORCED TO CHANGE THE TEACHING AND ASSESSMENT METHODS USED. THE MOST UP-TO-DATE INFORMATION ABOUT THE TEACHING/ASSESSMENT METHOD(S) WILL BE AVAILABLE IN THE COURSE SYLLABUS.

This course gradually sheds light on the complex relationships hidden within large datasets in business and economics, which are becoming more widespread every day. These datasets are large both in terms of the number of observations and variables collected. Large datasets require new methods for extracting relevant information, prediction and business decisions. This course introduces students to a set of modern statistical and data mining methods accompanied by supporting visualization approaches to process large data in business and economics. Topics include data cleaning and exploration, data mining methods such as k-nearest neighbour, regression trees and clustering, and model evaluation techniques. To learn how to apply the methods, the course walks students through a collection of hands-on analysis problems that make use of the basic functionality of the free software R for statistical computing and graphics.

Formative assessment: Feedback by tutors and peers during tutorial meetings  
 Summative assessment: Final exam (combination of multiple choice and open questions), final project and short intermediate assignments  
 Instructional approach: Lectures and tutorials

Literature  
 Prerequisites  
 Keywords  
 Teaching methods Lecture / Assignment / Groupwork / Coaching  
 Assessment methods Final Paper / Assignment / Presentation / Take home exam  
 Evaluation in previous academic year For the complete evaluation of this course please click <http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM>

This course belongs to the following programme / specialisation

|                             |                             |
|-----------------------------|-----------------------------|
| Bachelor Business Analytics | Year 1 Compulsory Course(s) |
|-----------------------------|-----------------------------|