Course Descriptions None 2021-2022

Course Title	Data Science
Course Code	BENC2011
ECTS Credits	5,0
Assessment	Whole/Half Grades

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
5	11-4-2022	25-5-2022		X		X	L

Level	no level
Coordinator	Adriana Iamnitchi For more information:a.iamnitchi@maastrichtuniversity.nl
Language of instruction	English
Goals	Learn about the data science lifecycle; * Apply Python as a programming language to perform data analysis tasks; * Become acquainted with the data manipulation process and how to achieve this in Python; * Get introduced to basic machine learning algorithms and their applications, network science techniques for modeling, analyzing and reasoning about relationships between entities * Understand and apply data interpretation and visualization tools
Description	Data science is an interdisciplinary field concerning scientific methods, processes, and systems to extract knowledge or insights from data in various forms, either structured or unstructured. This course is framed around the data science lifecycle to show the techniques for handling a data science project. The data science life cycle is divided in seven steps; 1) defining relevant objectives and data science research questions, 2-3) data acquisition and preparation for investigation (scraping, wrangling, cleaning, handling erroneous or missing values and sampling) to guarantee high quality and quick and reliable access, 4) exploratory data analysis to generate hypotheses, 5) feature engineering to select important and meaningful data features, 6) predictive modelling based on machine learning algorithms and 7) correct communication of the analysis outcomes through visualization, storytelling and reporting.
Literature	
Prerequisites	BENC1002 Calculus BENC1004 Linear Algebra
Keywords	
Teaching methods	Lecture / Groupwork
Assessment methods	Written Exam / Assignment / Presentation
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 Engineering	Year 2 Elective Course(s)