

## Course Descriptions Bachelor 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	3-6-2022		X		X	L
Level	no level							
Coordinator	Adriana Iamnitchi For more information:a.iamnitchi@maastrichtuniversity.nl							
Language of instruction	English							
Goals	<p>Learn about the data science lifecycle;</p> <ul style="list-style-type: none"><li>* Apply Python as a programming language to perform data analysis tasks;</li><li>* Become acquainted with the data manipulation process and how to achieve this in Python;</li><li>* Get introduced to basic machine learning algorithms and their applications, network science techniques for modeling, analyzing and reasoning about relationships between entities</li><li>* Understand and apply data interpretation and visualization tools</li></ul>							
Description	<p>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.</p>							
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 <a href="http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM">http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM</a>							
This course belongs to the following programme / specialisation	Bachelor Business Engineering				Year 2 Elective Course(s)			