Course Descriptions None 2020-2021

Course Title	Mathematical Analysis
Course Code	EBC1043
ECTS Credits	6,5
Assessment	Whole/Half Grades

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
1	31-8-2020	16-10-2020		X		X	

Level	no level
Coordinator	Stan van Hoesel For more information:s.vanhoesel@maastrichtuniversity.nl
Language of instruction	English
Goals	* Students provide proof of the ability to use mathematical tools to build and develop mathematical models. * Students provide proof of the ability to use mathematical tools to solve models.
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 offers a wide range of interesting calculus and linear algebra techniques, which are almost indispensable for Big Data applications. The topics discussed in the first part of the course include, among others, limits, continuity, differentiation and specific functions derivatives, partial derivatives, gradients and series. In the second part of this course, students will be introduced to concepts of linear algebra from an algebraic and geometric point of view. Emphasis is given to topics that will be useful in other disciplines, including systems of equations, linear transformations, vector spaces, matrix arithmetic, determinants and eigenvalues. You will also learn some applications like the idea behind Google PageRank and its connection with eigenvalues, and you can also apply similar techniques for ranking sport teams or universities. The subject areas covered in this course are fundamental for the mathematical aspect of data science and for most branches of mathematics and engineering sciences. Both the intuition behind the concepts and their formal definitions will be presented along with simple examples of formal mathematical proofs.
Literature	
Prerequisites	
Keywords	
Teaching methods	PBL / Lecture
Assessment methods	Written 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)