Course Descriptions None 2022-2023

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	5-9-2022	21-10-2022		X		X	

Level	Introductory
Coordinator	Dirk Tempelaar For more information:d.tempelaar@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. A RE-EMERGENCE OF THE CORONAVIRUS AND NEW COUNTERMEASURES BY THE DUTCH GOVERNMENT MIGHT FORCE COORDINATORS 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	This course is in transition. The following rule applies to bachelor Business Analytics students who started the programme prior to academic year 2022/23. TRANSITIONAL REGULATION (EBC1043): Students who did not pass the course EBC1043 can repeat it. Use Ask SBE to register for education (deadline is July 15, 23:59). See the Transitional Regulations section in the Bachelor Education and Examination Regulations for more information.
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

Transitional Regulations	See prerequisites