

Course Name	Big Data Analytics
Contents and Objectives	<p><u>Content:</u> The characteristic feature of Big Data is that the data volumes to be processed are too large, too complex, too fast-moving or too weakly structured to be analyzed using manual and conventional data processing methods. In this module, basic mathematical models in the field of Big Data Analytics will be presented as well as an application-oriented relation to relevant problems in economics. Mathematical tools from applied mathematics (in particular numerical linear algebra, statistics, optimization, game theory, graph theory, ordinary differential equations) are explained and applied to current problems of data analysis in an economic context.</p> <p><u>Objectives:</u> The students acquire fundamental methodological and technology-specific knowledge and skills in the subject areas of 'Business Intelligence' and 'Business Analytics' aimed for the analysis of data as commonly performed in business. They will be able to handle structured data sets by using mathematical methods and to interpret the achieved results. In addition, the students will become familiar with possible applications and challenges of Big Data, acquire a basic knowledge of the corresponding techniques and be able to apply suitable mathematical models for the economic problems.</p>
Teaching	<p>This course consists of lectures and exercise classes.</p> <ul style="list-style-type: none"> • Lecture: Mathematische Grundlagen von Big Data Analytics (4h/week) • Exercise class: Mathematische Grundlagen von Big Data Analytics (2h/week) <p>This class can be taught remotely.</p>
Prerequisites	
Examination	Oral exam (30 minutes)
Credits	6 ECTS points
Frequency	This course is given at least every second year.
Workload	The estimated total working time for this course is 180 hours.
Duration	This course is given during one semester.