Course Descriptions None 2026-2027

Course Title	Descriptive and Predictive Analytics
Course Code	EBC4222
ECTS Credits	5,0
Assessment	Whole/Half Grades

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
5	12-4-2027	4-6-2027		X		X	

Level	Advanced
Coordinator	Yangzhuoran Yang For more information:yangzhuoran.yang@maastrichtuniversity.nl
Language of instruction	English
Goals	The course aims to introduce advanced probabilistic models and statistical techniques for descriptive and predictive analytics for business cases. Time series models, discrete choice models and panel data models constitute the core of the probabilistic and statistical techniques introduced in the course. After successfully finishing this course, you will be able to: * Use several statistical and econometric models for time series data, discrete choice data and panel data. * Evaluate the applicability of different econometric models for a given business problem. * Translate business problems to canonical time series, discrete choice or panel data models. * Understand and use fundamental concepts of hypothesis testing and model comparison in analyzing business data. * Apply time series, discrete choice and panel data models for describing and summarizing business data and for evaluating the potential future outcomes in a business problem. * Interpret and communicate the numerical results of time series, discrete choice and panel data models in a business context.
Description	Descriptive and predictive analytics tools are used in several application areas for explaining and forecasting data patterns such as purchasing patterns of customers, credit payments of individuals, planning of operations and inventory levels where data patterns are linked to potential causal factors, including time. The methods and techniques covered in this course are particularly relevant for business applications where data are collected over time and/or the data represent choices from multiple alternatives. In addition, when multiple cross-sectional instances of the same phenomena – e.g. from different individuals, customers, companies or inventory locations – are observed over time, panel data models covered in this course allow for characterizing individual patterns as well as data patterns over time to improve data description and prediction. Such time-dependence and cross-sectional dependence in data are not accounted for in conventional data analysis methods, hence the course provides advanced knowledge in data analysis. This course specifically aims to provide hands-on experience in using these statistical models in business cases.
Literature	Literature will be provided.
Prerequisites	Business Analytics (2017-100-EBC4220). Recommended background knowledge includes statistics, econometrics, probability theory and elementary programming skills.
Keywords	
Transitional Regulations	
Teaching methods	PBL / Presentation / Lecture / Assignment / Groupwork / Research / Skills / Coaching
Assessment methods	Attendance / Participation / Written Exam / Assignment / Presentation / Take home 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

Master Business Intelligence and Smart Services	Core Courses