

## Course Descriptions Bachelor 2022-2023

Course Title Probability Theory  
 Course Code EBC1024  
 ECTS Credits 6,5  
 Assessment Whole/Half Grades

Period	Start	End	Mon	Tue	Wed	Thu	Fri
4	6-2-2023	31-3-2023		X		X	L
5	17-4-2023	9-6-2023		X		X	L

Level Introductory

Coordinator Michael Eichler For more information: [m.eichler@maastrichtuniversity.nl](mailto:m.eichler@maastrichtuniversity.nl)

Language of instruction English

Goals The purpose of the course is to introduce students to formal probabilistic concepts that are required for a theoretical understanding of statistical and econometric concepts. Students should be able to apply the acquired methods to problems in econometrics, economics, finance, and other fields.

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.

Probability theory is the branch of mathematics concerned with analysis of random phenomena. It thus forms the mathematical foundation of statistics and is essential for understanding the quantitative analysis of large sets of data. The course covers the key concepts and tools from probability theory that are required at later points in the programme. Important topics are random variables and probability distributions, dependence between multiple random variables, and convergence of random variables. The course starts in period 4 and continues until the end of period 5.

Literature Casella G. & R.L. Berger, Statistical Inference, 2nd edition, Duxbury Press, Thomson Learning, 2002. ISBN 0-534-24312-6.  
 (We cover the first five chapters in this course. The sequel of the same book, Chapters 6-11, will be covered in the follow-up course Mathematical Statistics, code EBC2107).

Prerequisites Differential and integral calculus, elements of mathematical analysis, linear algebra, and set theory.

Teaching methods Lecture / Assignment

Assessment methods Participation / 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 Econometrics and Operations Research Year 1 Compulsory Course(s)