Course Descriptions None 2025-2026

Course Title	Computational Research Skills (E&OR)
Course Code	EBS4043
ECTS Credits	4,0
Assessment	Pass / Fail

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
S1	1-9-2025	30-1-2026	C				

Level	Advanced
Coordinator	Stephan Smeekes, Ines Wilms For more information:s.smeekes@maastrichtuniversity.nl; i.wilms@maastrichtuniversity.nl
Language of instruction	English
Goals	The objective of the skills training is to prepare you for the master thesis in Econometrics & Operations Research by obtaining computational and academic writing skills, as well as finding and sharpening a thesis topic. After having completed the skills training you are able to: * Conceptualize a specific problem into algorithmic instructions (‘pseudo-code'); * Implement such pseudo-code in a programming language; * Use computational tools such as simulation methods for investigating a research question; * Write academic reports about a computational study; * Have a clear view on the research topic of your master thesis; * Formulate a concrete research question that you will investigate in your master thesis; * Motivate and give context to your research question using appropriate academic literature; * Write a research proposal that serves as the basis of your master thesis.
Description	The skills focuses on two key elements. The first is to learn the computational and academic writing skills needed for a master thesis in Econometrics & Operations Research. The second is to find a research topic and supervisor. For the computational part, there will be attention to all the different directions within Econometrics & Operations Research, such that every student can focus on the elements most useful to their thesis. In a series of sessions, supported by online materials, we treat how to conceptualize a specific problem into algorithmic instructions (‘pseudo-code'), how to implement these instructions in a programming language, and how to write academically about such an implementation. There will be a focus on simulation methods that have widescale applicability to address a broad range of research questions for a master thesis in Econometrics & Operations Research. The second key element is to find a research topic and developing it into a research proposal. This will be done through literature and self-study as well as consultation with your thesis supervisor (to be allocated during the process).
Literature	A selection of (survey) articles on the specific techniques considered and manuals on software used (all will be distributed via the course website).
Prerequisites	Quantitative background corresponding to students in the master in econometrics and operations research or research master programme.
Keywords	
Transitional Regulations	
Teaching methods	PBL / Lecture / Assignment / Groupwork / Coaching
Assessment methods	Final Paper / Assignment
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 Econometrics and Operations Research	Thesis