Course Descriptions None 2024-2025

Course Title	Computational Research Skills (Research Master)
Course Code	EBS4044
ECTS Credits	4,0
Assessment	Pass / Fail

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
S1	2-9-2024	26-1-2025	C				

Level	Advanced
Coordinator	Stephan Smeekes For more information:s.smeekes@maastrichtuniversity.nl
Language of instruction	English

Goals

The objective of the skills training is to prepare you for a research master thesis involving computational methods by obtaining computational and academic writing skills, as well as becoming familiar with computational research topics.

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 computationally oriented research topics;
* Formulate concrete research questions that you might investigate in your master thesis;
* Motivate and give context to your research question using appropriate academic literature;
* Write a research proposal focused on a computational topic.

Description

The skills focuses on two key elements. The first is to learn the computational and academic writing skills needed for doing research on computational topics (for example in your master thesis). The second is to explore computational research topics. For the computational part, there will be attention to all the different directions related to Econometrics & Operations Research, such that every student can focus on the elements most useful to their interests. 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 involving computational methods.

The second key element is to explore research topics and developing them into a research proposal. This will be done through literature and self-study.

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

This course is in transition for the master Business Research.
See the Master Education and Examination Regulations for more information.

The following rule applies to master Business Research students who started the programme prior to academic year 2024-2025.
TRANSITIONAL REGULATION (EBS4044):
The master Business Research has been discontinued.
Courses of the Business Research master's programme will continue to be offered until and including academic year 2025-2026 with exam opportunities running until and including 2026-2027.

PREREQUISITES:
Quantitative background corresponding to students in the master in econometrics and operations research or research master programme.

Keywords	
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 Business Research - Operations Research	Transitional Regulation
Master Economic and Financial Research - Econometrics	Year 1 Compulsory Skill(s)
Master Economic and Financial Research - No specialisation	Year 1 Elective Skill(s)