

MW122: Topics in Econometrics and Data Science				Study programme:	M
Module type:	ECTS points:	Workload:	Semester of study:	Duration of the module:	
Compulsory Elective	8	240	1 st or 3 rd	one semester	
Courses:			Contact hours:	Independent study:	Planned group size:
Course 1: Topics in Econometrics and Data Science (2 SWS)			30h	90h	40
Course 2: Topics in Econometrics and Data Science - Tutorial (2 SWS)			30h	90h	40
Learning objectives and competences:					
<p>After completing the module, students are able to</p> <ul style="list-style-type: none"> - read code and write their own program using Python; - understand and apply basic machine learning methods; - write code in Python in order to perform a statistical analysis; - visualize data with Python; - apply machine learning in economic context with Python. <p>The acquired knowledge is applied actively in exercise tasks using the Python programming language.</p>					
Key competences:					
<ul style="list-style-type: none"> - scientific work - critical thinking - analytical skills - willingness to learn and perform - oral and written communication skills - programming skills in Python 					
Course content:					
<ul style="list-style-type: none"> - Introduction to Programming with Python - Basics of statistics - Machine Learning – Regression (OLS, Quantile Regression, Lasso, Ridge, ...) - Machine Learning – Classification (Logistic Regression, Support Vector Machines, Random Forests, ...) 					
Language:					
The course language of all events is English.					
Teaching forms:					
Lecture, group work, independent study.					
Applicability of the module:					
M.Sc. VWL (examination regulation 2023), M.Sc. Economics (examination regulation 2023), M.Sc. BWL, M.Sc. FVM.					
Requirements for participation:					

Admission to the Master's study programmes in „Volkswirtschaftslehre“, „Economics“, „Betriebswirtschaftslehre“ or „Finanz- und Versicherungsmathematik“. Basic knowledge of statistics and econometrics from the Bachelor's study programme required. First experiences in programming (e.g. in R) are helpful.

Forms of examination:

The final module examination takes place in the form of another examination output.

Requirements for the award of ECTS points:

Passing the final module examination. A final module examination is successfully passed if the grade is at least „sufficient“ (4.0).

Frequency:

The course takes place in the winter semester.

Significance of the grade for the final grade:

This module is graded and taken into account when calculating the overall grade of your Master's degree. For more detailed information on the calculation of the overall grade, please refer to the applicable examination regulations of your respective study programme.

Module supervisors and full-time lecturers:

Prof. Dr. Jannis Kück and research assistants

Other information:

Up-to-date information can be found on the website of the module supervisor.

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