



Course description



Created by / on:	D.A. 16.11.2020
Modified by / on :	
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Master of Science in Quantitative Economics and Finance Semester 4

X:\3. Masters\14. MSc in Quantitative Economics and Finance\7. Syllabus\summer semester

Module	Title	Module 2
	Code	QTECOFIN/2

Course	Title	Advanced Empirical Analysis - Finance
	Code	QTECOFIN-7

1. COURSE DETAILS

Language of teaching		English		
Number of units		30		
Workload and its composition¹		108	Contact hours	23
			Hours spent on self-study and examinations	86
Course credits (ECTS)²		TBD		
Pre-requisite(s)³				
Study director		Andreas IRMEN		
Course leader(s)		Benjamin HOLCBLAT		
Frequency of offer⁴		Each academic year		
Organisation	Semester course	<input checked="" type="checkbox"/>		
	Block course	<input type="checkbox"/>		
Form of course	Obligatory course	<input checked="" type="checkbox"/>		
	Elective course	<input type="checkbox"/>		
Tutorials	Yes	<input type="checkbox"/>		
	No	<input checked="" type="checkbox"/>		
Tutorials leader(s)				

2. COURSE CONTENT

Extremum estimators
Hypothesis testing
Elements of Bayesian econometrics
Calibration
Simulated method of moments
Indirect inference
Panel methods
Diff-in Diff
Regression discontinuity

3. TEACHING AND LEARNING METHODS⁵

The course introduces the students to advanced empirical techniques that are used in finance. The course presents the underlying theory behind these techniques, as well as how to implement them on real data. The course builds on the previous courses of the curriculum. A working knowledge of calculus, linear algebra, static optimization under constraints, probability, statistics and linear econometrics are required.

4. ASSESSMENT

<input checked="" type="checkbox"/>	Written Exam	70%	
<input type="checkbox"/>	Mid-term exam	%	
<input type="checkbox"/>	Oral Exam	%	
<input checked="" type="checkbox"/>	Seminar paper	%	
<input type="checkbox"/>	Presentation	%	
<input checked="" type="checkbox"/>	Other	30%	Homeworks
<input type="checkbox"/>	No assessment	%	

5. COURSE OBJECTIVES / EXPECTED LEARNING OUTCOMES

On completion of the course unit successful students will be able to:

- i) make students able to start a research project that relies on advanced empirical methods
- ii) make students able to read and assess critically empirical research papers
- iii) make the students able to apply and implement the methods presented in class.

6. LITERATURE⁶

Angrist, Joshua D., and Jörn-Steffen Pischke. *Mostly harmless econometrics: An empiricist's companion*. Princeton university press, 2008.

Singleton Kenneth, *Empirical Dynamic Asset Pricing: Model Specification and Econometric Assessment*, Princeton University Press, 2006

¹ **Workload** indicates the time students typically need to complete all learning activities required to achieve expected learning outcomes. It embraces:

- Contact hours (lectures, seminars, training exercises...),
- Hours spent on self-study and examinations.

² **ECTS-Credits**: The number of credits is based on the student workload. One credit corresponds to 25 to 30 hours of work.

³ **Prerequisites**: The conditions of participation have to be defined. Are specific knowledge and skills required for a successful participation?

⁴ **Frequency**: Is the course offered each academic year, each semester, or only in larger intervals?

⁵ **Teaching and learning methods**: Description of the teaching and learning methodologies e.g. lectures, seminars, exercises, project work, internships, and self-study.

⁶ **Literature**: Compulsory and recommended literature.