

Advanced Econometrics – Bootstrap Methods in Econometrics

1. Course details

Semester: 2

Credit rating: 1 ECTS

Teaching units: 15

Pre-requisite(s): A previous Master or Ph.D. level course in econometrics.

Lecturer: Prof. Gautam TRIPATHI (gautam.tripathi@uni.lu)

Administrator: Roswitha Glorieux (roswitha.glorieux@uni.lu)

Tutors: None

Lecture times and
rooms: See point 3

Tutorial times and
rooms: None

Communications **Students should regularly read their University e-mails, as important information will normally be communicated this way.**

Mode of
assessment: Attendance and short (15 pages) term paper. The term paper is due one month after the course ends.

Examination
Periods: NO

Course Webpage: [Moodle.uni.lu](https://moodle.uni.lu)

2. Aims and objectives

Aims

This course is intended for PhD students. The objective of this short course is to familiarize students with the theoretical and practical aspects of some bootstrap methods that are widely used for doing statistical inference for a large class of econometric models.

Learning Objectives

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

1. Gain a good understanding of simulation based statistical inference and become familiar with computer intensive statistical methods.
2. Process empirical data using the methods learnt in the course.
3. Read, understand, and critically evaluate the econometrics articles in peer-reviewed journals encountered during the course of their own research.

3. Plan of semester

Campus Kirchberg, Room A.16

2023	from	To	Topic of lecture	Deadline for students' work
Wednesday 01 March	11.30 14.00	13.00 16.30	Motivating the nonparametric bootstrap. When does it work? Consistency of the bootstrap.	
Monday 06 March	11.30 14.00	13.00 16.30	Bootstrap estimation of bias and variance. Bootstrap critical values for hypothesis tests, bootstrap confidence intervals.	
Wednesday 13 March.	11.30 14.00	13.00 16.30	Bootstrapping regression models and moment condition models. Alternatives when the nonparametric bootstrap doesn't work: m of n bootstrap, subsampling.	Term paper due April 31, 2023

4. Course details (by topics)

See attached syllabus for details.

5. Reference list/ Bibliography

See attached syllabus for details.

6. Further information about assessment

Examination(s)	None	
Weighting:	50%	50%
Structure:	Attendance (Pass/Fail)	Term paper (Pass/Fail)