Doctoral School in Economics and Finance

DSEF 2.4. Advanced Econometrics – Nonlinear Models and Methods

1. Course details

Semester:	2
Credit rating:	2 ECTS
Teaching units:	30
Pre-requisite(s):	A previous Masters 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:	please 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 web page:	moodle.uni.lu

2. Aims and objectives

Aims
This short course is intended for research track Masters and Ph.D. students. It is devoted to the study of some nonlinear micro econometric models and methods that are widely used in applied economics and social science research.

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

1. Have a good understanding of some widely used nonlinear microeconometric models and methods used by economists to answer policy related questions.
2. Understand how these models are interpreted, identified, estimated, and tested; how the asymptotic distributions of the various estimators and test statistics are obtained; and the fundamental assumptions underlying these results.
3. Process and interpret empirical data using the models and methods learnt in class and test whether these data are in accordance with economic theory.
4. Read, understand, and critically evaluate the econometrics articles in peer-reviewed journals encountered during the course of their own research.

3. Plan of semester

Date	From	To	Campus Kirchberg	Topic of lecture	Deadline for students' work
Mar 2	11h30 14h00	13h00 16h30	A16	Nonlinear regression. Transformation models. Maximum likelihood and GMM for nonlinear models.	
Mar 6	11h30 14h00	13h00 16h30	A16	Binary choice models – logit and probit (with and without endogenous regressors).	
Mar 9	11h30 14h00	13h00 16h30	A16	Multinomial discrete choice and ordered response models – logit and probit.	
Mar 13	11h30 14h00	13h00 16h30	A16	Models of censoring and truncation. Double hurdle and duration models. Heckman type selection models.	
Mar 16	11h30 14h00	13h00 16h30	A16	Nonlinear panel data models with fixed effects: Panel logit and probit. Conditional logit. Estimating marginal effects.	
Mar 20	11h30 14h00	13h00 16h30	A16	Panel poisson with fixed effects. Count data models.	Term paper due by April 30.

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)		
Weighting:	50%	50%
Structure:	**Attendance** Pass/Fail	**Term paper** Pass/Fail