

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 Ph.D. students. It is devoted to the study of some nonlinear microeconomic 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 microeconomic 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

Campus Kirchberg, Room C.16

Date	From	To	Topic of lecture	Deadline for students' work
Wednesday Mar 2	11h30 14h00	13h00 16h30	Nonlinear regression. Transformation models. Maximum likelihood and GMM for nonlinear models.	
Monday Mar 7	11h30 14h00	13h00 16h30	Binary choice models – logit and probit (with and without endogenous regressors).	
Wednesday Mar 9	11h30 14h00	13h00 16h30	Multinomial discrete choice and ordered response models – logit and probit.	
Monday Mar 14	11h30 14h00	13h00 16h30	Models of censoring and truncation. Double hurdle and duration models. Heckman type selection models.	
Wednesday Mar 16	11h30 14h00	13h00 16h30	Nonlinear panel data models with fixed effects: Panel logit and probit. Conditional logit. Estimating marginal effects.	
Monday Mar 21	11h30 14h00	13h00 16h30	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