Syllabus

NON-PARAMETRIC ECONOMETRICS - 57854

Last update 17-02-2014

HU Credits: 4

Degree/Cycle: 2nd degree (Master)

Responsible Department: Economics

Academic year: 5

Semester: 2nd Semester

Teaching Languages: English

Campus: Mt. Scopus

Course/Module Coordinator: Dan Ben-Moshe

Coordinator Email: danbm@huji.ac.il

Coordinator Office Hours: by appointment

Teaching Staff:
  Dr. Dan Ben-Moshe
Course/Module description:
Often researchers find parametric models such as \( YX'B+e \) restrictive and sensitive to deviations from the parametric specifications. Nonparametric methods are statistical techniques that do not require the researcher to specify a particular form of part or all of the model (e.g. regression function, probability density function etc.). This course provides an introduction to nonparametric methods used in econometrics. The course is structured so that we learn new methods and then apply them to data using MATLAB.

Course/Module aims:
The first part of the course covers some traditional topics in nonparametric econometrics such as kernel density estimation. The second part of the course focuses on estimation in semiparametric models such as single index models. The third part of the course will cover some of the recent developments in nonparametric econometrics such as instrumental variables in nonparametric models. We will also have a class in the computer lab on MATLAB.

Learning outcomes - On successful completion of this module, students should be able to:
- Develop a basic understanding of the set up and language of nonparametric econometric methods, with particular focus on density estimation and regression.
- Develop an understanding of the basic mechanics of asymptotic properties of certain nonparametric econometric methods.
- Familiarity with MATLAB.

Attendance requirements(%): 
100

Teaching arrangement and method of instruction: Lectures

Course/Module Content:
- Density estimation
- Estimation of the nonparametric regression \( Yg(X)+U \)
- Series methods
- Nonparametric nonseparable models \( Ym(X,U) \)
- Semiparametric methods for a partially linear regression
- Single index models
- Nonparametric models with instrumental variables
Required Reading:
None

Additional Reading Material:
``Nonparametric Econometrics: Theory and Practice'' by Qi Li and Jeffrey Racine
There are many notes on nonparametric econometrics online.

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 0 %
Participation in Tutorials 15 %
Project work 0 %
Assignments 70 %
Reports 0 %
Research project 0 %
Quizzes 15 %
Other 0 %

Additional information:
None