Course Goals and content

The goal of the course is to provide graduate students with an understanding of general equilibrium modelling in a complementarity framework. The course will include an introduction to the GAMS algebraic modelling language. The course will cover applications in imperfect competition and environmental economics and several canonical models from the academic literature.

Course Content

A The Basics: Closed Economy Models
1. Translating analytic models into computer simulations: examples of optimization and complementarity in partial and general equilibrium models
2. Extensions of the textbook closed economy model: pollution externalities, optimal taxation, increasing returns and imperfect competition
3. Essential GAMS syntax for scalar applications

B Open Economy and Multiregional Trade Models
1. Tariffs, trade costs, quotas
2. Nash equilibrium tariffs
3. Essential GAMS syntax for indexed applications

C Historical Perspective on Applied General Equilibrium
1. Mathiesen’s complementarity format
2. Partial equilibrium applications of complementarity methods: the PIES Model
3. The Miller-Spencer Model

D Requisite Price Theory
1. Nested CES functions and their application
2. The calibrated share form
3. Non-separable CES functions – calibration and computational techniques
4. General Equilibrium Modelling with MPSGE

E Other Applications of Complementarity with Industrial Organization and Trade
1. Theory-Consistent Endogenous Markups
2. A Heterodox Approach to Heterogeneous Firms
3. Dairy tariff quota liberalization: bilateral versus MFN reform options

Grading

Class participation (10%); homework (2 short assignments – 20%); take-home exam (70%).

Timetable

The course takes place from Monday 13.05 to Saturday 18.05. Class hours are 9am-12am (noon), 1.30pm-4.30pm.

This is an intensive course. Please try to do (some) readings already before the course-week starts. Lecture notes, data, and code are made available prior to the lecture.

Lecture hours: 36 ECTS: 6

Organization

The course is intended for PhD students in economics or a closely related field who are interested in general equilibrium modelling with GAMS software. Students from all Swiss universities may enrol. A limited number of people with relevant professional or academic interest may be also admitted.

Tuition fee: 500 CHF.

Venue: World Trade Institute, University of Bern. Hallerstrasse 6, 3012 Bern.

Send your application to: phd.applications@wti.org