

Computable General Equilibrium Modeling in GAMS/MCP

In this workshop, you learn to implement computable general equilibrium (CGE) models in the mixed complementarity (MCP) format using GAMS. During the workshop, you gain both theoretical knowledge and practical experience. In numerous exercises, you learn to build, run and interpret CGE models with a number of practice-oriented features, such as benchmark taxes, Armington trade and Ramsey dynamics. The last day is reserved for modeling in MPSGE, a convenient mathematical programming system for general equilibrium analysis which operates as a subsystem within GAMS.

Please find the workshop schedule below. The workshop has a modular layout: You can choose to attend the first **2, 3, 4 or all 5 days**. It is not possible to attend only one day or to skip a day in the beginning or in between. The workshop and each module will take place only when there is a minimum of 5 participants.

Date: **14-18 November 2011**

Find the exact schedule on the next page. Course hours include coffee breaks.

Location: Ecole Polytechnique Fédérale de Lausanne (EPFL)
Route Cantonale
1015 **Lausanne**
Switzerland

Directions: Line M1 of the TL (Transports Lausannois) takes you from Renens station or from Flon (in the centre of Lausanne) to the EPFL. M2 connects Lausanne station with Flon.

At <http://information.epfl.ch/access> you find further information, including

- a link to a timetable for Metro M1,
- a link to train timetables (CFF),
- directions and parking information for motorists,
- a printable campus map.

Venues are specified in the workshop schedule below. It is recommended to look up the location of the rooms at <http://plan.epfl.ch/>

Instructor: Dr. **Frank Vöhringer**, Environmental and energy economist, lecturer at Ecole Polytechnique Fédérale de Lausanne (EPFL)

No. of participants: max. 12, min. 5

Prerequisites: Graduate knowledge of microeconomics, basic knowledge of GAMS (You can prepare by going through the exercises in Rob Dellink's GAMS reader up to exercise 3.2.18. A pdf version of the reader is downloadable at <http://www.enr.wur.nl/NR/rdonlyres/B3866E0C-C1EF-463E-A420-90BFAB4884BA/83865/GAMSReaderApril20091.pdf>)

Workshop schedule:

Monday: The basics

room CH B3 31

10:00 to 13:00 and 14:00 to 18:00

- Agents' optimization problems
- Structure of an applied general equilibrium model
- Mixed complementarity (MCP)
- Social accounting matrix and benchmark calibration
- Nested CES functions
- 2x2 economy in MCP (GAMS scalar syntax)
- Benchmark replication and debugging

Tuesday: Vector syntax and simple counterfactuals

Room GR A3 30

9:00 to 12:30 and 13:30 to 17:00

- 2x2 economy in MCP (GAMS vector syntax)
- Running a counterfactual
- Labor-leisure choice, minimum wage and factor taxes

Wednesday: Taxes, tariffs and foreign trade

Room CO 120

9:00 to 12:30 and 13:30 to 17:00

- Tax theory
- Benchmark taxes
- Running a scenario loop
- Endogenous taxes
- Armington trade and tariffs

Thursday: Ramsey dynamics

Room CO 120

9:00 to 12:30 and 13:30 to 17:00

- Capital dynamics in a Ramsey-type growth model
- A fully dynamic CGE model in MCP

Friday: MPSGE

Room CO 120

9:00 to 12:00 and 13:00 to 16:00

- MPSGE syntax
- 2x2 economy in MPSGE
- Exercises in MPSGE
- A fully dynamic CGE model in MPSGE

- Cost:** 450 Swiss Francs per person and day, 385 Swiss Francs for day 5 (workshop only; does not include transport, board and lodging)
- Registration:** Please send an e-mail to frank.voehringer@epfl.ch, briefly specifying
- your name, affiliation and address,
 - the number of days that you register for (2, 3, 4, or 5),
 - your experience in economic modeling,
 - your experience in using GAMS.
- Payment:** Please pay the respective amount in Swiss Francs (2 days: CHF 900, 3 days: CHF 1'350, 4 days: CHF 1'800, 5 days: CHF 2'185) to Frank Vöhringer's account at Berner Kantonalbank, IBAN: CH41 0079 0042 4107 9918 4.
- Payment is due prior to the start of the workshop. You will receive an e-mail as soon as the minimum number of participants has been reached and the workshop's execution is certain. Proof of payment has to be presented at the beginning of the workshop or, where applicable, prior to a confirmation of workshop participation for visa application.
- Further information:** Please contact Frank Vöhringer at frank.voehringer@epfl.ch