

# Computable General Equilibrium Models: An introduction



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## Summary of the Training Session:

The training session will cover the basics of Computable General Equilibrium (CGE) modeling: model structure including producer, consumer, and trade behavior; functional forms; database including Social Accounting Matrices (SAMs); and use in policy analysis. In addition, we will conduct hands-on exercises running CGE models using the GAMS (General Algebraic Modeling System) software.

The target group is students/researchers with knowledge of macro and microeconomics with calculus. No specialized software skills are needed. However, it is advisable that students arrive to the training session with GAMS (General Algebraic Modeling System) already installed in their computers. To that end, links to software and training materials will be distributed through the website at <https://sites.google.com/view/introduction-cge-iioa>.

## Outline:

### First and Second Sessions: what is a CGE model? a simple CGE model based on a SAM with 2 sectors, 2 factors, and 2 households; the GAMS software

- What is a CGE model?
- Brief history of CGE modelling.
- Optimization problems in consumption and production.
- A simple example: 2 sectors, 2 factors, and 2 consumers.
- Data requirements: the social accounting matrix.
- Calibration.
- Interpretation of results.
- The SAM-based simple CGE model in GAMS: introduction to the software, basic use, definition of scenarios, using report GDX files, and analysis of simulation results.

### Third and Fourth Sessions: a static open economy CGE model.

- Detailed review of a static open economy (SOE) CGE model: underlying theory and mathematical statement; optimization problems in consumption, production, and trade.
- Data requirements: social accounting matrix, elasticities, and other data.
- A description of an illustrative SAM.

- The SOE CGE model in GAMS: definition of scenarios and analysis of simulation results.

**Prerequisites:**

See above.

**Suggested References:**

See <https://sites.google.com/view/introduction-cge-iioa>.