

ECO419
Computable General Equilibrium Models
(Section: 001)

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Description

The theory of general equilibrium plays a prominent role in contemporary economics. A general equilibrium model allows us to set the causal relationships among economic variables of interest in a satisfactory manner: We can identify the effects of a policy change or of an exogenous shock on all segments of the economy.

A model is useful when it is solved! Thus, in possibly all cases, we are interested in developing *solvable* general equilibrium models, first, to see whether they explain the real world well enough, and, second, to use the solved (reliable) model for policy analyses. The name of this “game” is called *applied general equilibrium analysis*, and this course, simply put, is an *introduction* to applied general equilibrium modeling.

Grading

Midterm	Final	Resit
45%	55%	55%

Exams

- Your exams will *not* be of multiple choice type.
- There will be *no* make-up exams either for the midterm or the final unless you provide a genuine excuse report approved by a (committee of) physician(s), your national team coach or other authorities.
- There will not be any rescaling of the final grade points, also known as *the curve*. Your absolute success determines your grade — *not* your success relative to those of your classmates.

Fall 2015 Logistics for ECO419

Class Meetings: D2 Wednesday 14:00–16:45

Office Hours: Thursday 09:00–12:00

Contents

- I. Introduction: why an economics based on mathematical models?
- II. The Theory of General Equilibrium
 1. Scarcity, Choice, and the Neoclassical Theory of Value
 2. The Dual Core: “*Agents optimize!*” & “*Markets clear!*”
 3. The Walrasian Equilibrium
 - i. Existence and Uniqueness
 - ii. Stability
 - iii. The Welfare Properties of the Walrasian Equilibrium
- III. A Private Ownership Economy with One Household, One Firm, One Good and One Factor
 1. The Model Environment
 2. Decision Problems
 3. Market Clearing Conditions
 4. The Analysis of the General Equilibrium
- IV. A General Equilibrium Model with a Government Sector
- V. Some Extensions
 1. External Sector
 2. Labor Market
 3. Consumption Technology
- VI. Social Accounting Matrices
- VII. Calibration
- VIII. CGE Models at Work
 1. Fiscal Policies
 2. Trade Policies
 3. Stabilization Policies
 4. Environmental Analysis

Materials

Lecture Notes The primary source of study materials will be your lecture notes. This means that you should take notes of what I write on the blackboard *and*, perhaps much more importantly, what we discuss in the class.

Textbook The textbook is the following:

- *Applied General Equilibrium: An Introduction*
by Manuel Alejandro Cardenete, Ana-Isabel Guerra & Ferran Sancho
Springer-Verlag Berlin Heidelberg, 2012

Required Readings You should read the following papers before the final exam:

- “Computable General Equilibrium Models and Their Use in Economy-Wide Policy Analysis”
by Ian Sue Wing
MIT Joint Program on the Science and Policy of Global Change, Technical Note No. 6, Sep. 2004
- “General Equilibrium in a Nutshell: An Explicit Function Example”
by James A. Yunker
The Journal of Economic Education, Vol. 29, No. 3, pp. 202-211, Summer 1998
- “General Equilibrium Theory in the Twenty-First Century”
by Michio Morishima
The Economic Journal, Vol. 101, No. 404, pp. 69-74, Jan. 1991
- “CGE Models and Development Policy Analysis: Problems, Pitfalls, and Challenges”
by Ramon L. Clarete & James A. Roumasset
American Journal of Agricultural Economics, Vol. 68, No. 5, pp. 1212-1216, Dec. 1986