Instructors: Dr. Carolina Diaz-Bonilla and Dr. Valeria Piñeiro
Email: Carolina@jhu.edu; vpineiro@jhu.edu
Class: Wednesdays 6-8:45pm, location: TBA
Office: TBA
Office Hours: Immediately before class, or by appointment

Course Objective
The objective of this course is to develop the ability to understand, interpret, and implement Computable General Equilibrium (CGE) models using the General Algebraic Modeling System (GAMS) software. The course will be primarily applied, however students will also learn basic relevant general equilibrium theory linked to empirical applications of CGE models.

The specific objectives: (1) gain an understanding of the underlying economic theory behind CGE modeling; (2) gain an understanding of the GAMS software; (3) be able to write simple CGE programs in GAMS; (4) be able to use and modify existing CGE programs and interpret results; and (5) be able to analyze public policy with CGE models.

Course Requirements
Course grade will be based on:
- Participation and modeling exercises (20%)
- Midterm group presentation (40%)
- Final paper (40%) (individual)

Prerequisites

Readings
No textbook is required. A list of required and recommended readings will be included soon.

Tentative Course Outline:
Week 1:
- Introduction and Overview of CGE Modeling
- Introduction to the GAMS software and GAMS IDE, with simple partial equilibrium (PE) models
- Modeling Exercise “0”: Partial Equilibrium McCarl model; begin in class, finish as homework
- PP: CGE course overview and intro.pptx, 1 steps to gams.ppt, 2 intro to gams.ppt, 3 gams_juegos.ppt
- Reading: Chapter 1, Burfisher (2011).

Week 2:
- Review Modeling Exercise “0”: Partial Equilibrium transport model.
• Modeling Exercise “1”: Simple economy, 2 activities- 2 factors- 2 households; begin in class
• PP: 4 CGE1-vp.pptx, 3 gams ejercicio.ppt

Week 3:
• Finish Modeling Exercise “1”: Simple economy, 2 activities- 2 factors- 2 households; continue in
class, finish as homework
• Social accounting matrices
• PP:
• Reading: Chapter 10, Sadoulet (1995).

Week 4
• Modeling Exercise “2”: Intermediate demand; begin in class, finish as homework
• PP: 5 elements of cge1.pptx, 4 CGE2-vp.pptx
• Reading: Chapter 11 and 12, Sadoulet (1995).

Week 5:
• Inside the CGE model
• Modeling Exercise “3”: Saving- Investment; begin in class, finish as homework
• PP: 4 CGE3a-vp.pptx, 4 CGE3b-vp.pptx
• Reading: Chapter 4 and 5, Burfisher (2011).

Week 6:
• Factor markets and trade
• Modeling Exercise “4”: Government; begin in class, finish as homework
• PP: review SAM, closures, 4 CGE4
• Reading: Chapter 6 and 7, Burfisher (2011).

Week 7:
• Final details of how to build a CGE model
• Modeling Exercise “5”: Open economy; begin in class, finish as homework
• PP: 4 CGE5-vp.pptx
• Reading: Robinson et al (1999).

Week 8: MIDTERM GROUP PRESENTATIONS – 15 minutes each

SPRING BREAK (March 17-23)

Week 9:
• 1-2-3 model
• PP: Robinson 1-2-3-model-s(1)kmm.ppt
• Reading: Devarajan et al (1997).

Week 10:
• Introduction to policy models
• Example of applied policy model
• PP: robinson intro policy models.ppt

**Week 11:**
• Comparative static IFPRI standard CGE model
• Using the excel interface.
• Closures
• PP: 5 standard cge model1.pptx
• Reading: Lofgren et al (2002).

**Week 12:**
• Comparative static IFPRI standard CGE model
• Run scenarios
• What can be change in the excel interface
• Write up your own simulations

**Week 13:**
• TBD (summing up, lecturer, questions)

*Final Paper due Friday, April 25: Final Paper due*

**Week 14 (Wednesday April 30):**
• IN CLASS PRESENTATION OF INDIVIDUAL FINAL PAPER
**Required readings**


http://www.ifpri.org/pubs/microcom/micro5.htm


**Recommended and more topical readings**


Macro closures


Labor Markets


Environmental Policy


Macro and Income distribution


Value Added Tax


Trade


Social Accounting Matrix


GAMS and exercises:


Kalvelagen, Edwin. Modeling with GAMS. Chapter 1. GAMS Development Corporation.