Course Description:
This course introduces the three main workhorse models that are used in modern macroeconomic analysis. These are optimal growth, overlapping generations and search. The aim of the macroeconomics sequence is to have students learn how to develop market (general equilibrium) models to address issues of relevance to macroeconomists. Much of this course is spent on the required analytical tools that are used. These are learned through the exposition of increasingly sophisticated macroeconomic models.

Prerequisites:
To take this course you need to be admitted to the PhD program or to obtain special permission. Special permission can be obtained from the instructor, the Director of Graduate Studies or the Director of the MA program.

Reading:
At the beginning of the semester will utilize the notes developed by Prof. Steve Williamson at Washington University in St. Louis. They will be supplemented by what we do in class. Beyond this there is no necessary reading but I will make reference at time to the following texts.


A math text referenced is:

Those of you who have not had a modern intermediate level macroeconomics course might want to look at Prof Williamson’s Book: *Macroeconomics*, published by Pearson.

**Homework:** There are 6 homework assignments. You will typically get at least one week to hand in your homework solutions.

**Grading:** The course grade will depend on a midterm, a final exam and homework. The mid-term will be 30% of the grade. The final will be 60%. The remaining 10% will be for homeworks. Homeworks will be graded by the TA on a pass/fail basis. If you do not make the deadline you automatically get a fail on that homework. (You are permitted to drop one homework grade.)

**Outline of Content**

**Part 1 Methodology and Introductory models**
(a) 1 period model with production
   Williamson notes: static models
(b) 1 period model with production and government
   Williamson notes: government
(c) Simple dynamic model, with government
   Williamson notes: Ricardian Equivalence
(d) 2 Period model with inside money (saving)
   Class notes only.

**Part 2: Overlapping generation models**
(a) Endowment economy
   Blanchard and Fischer
(b) Social security/outside money in endowment economy
   Blanchard and Fischer
(c) Diamond economy including government debt and failure of Ricardian equivalence
   Williamson notes.

**Part 3: Optimal growth and dynamic programming**
(a) Basic model environment
(b) Planners version
   Williamson notes
(c) Introduction to dynamic programming (DP),
   Wright notes (metric spaces, Rudin p30, contraction principle, Rudin p220)
(d) Optimal growth planner’s problem using DP
   Williamson notes
(e) Decentralized optimal growth model and competitive equilibrium
   Williamson notes
Part 4: Elementary Monetary Economics
(a) Money in Utility Function models
   Blanchard and Fischer
(b) Cash-in-Advance Models
   Williamson notes, Chapter 8

Part 5: Search
(a) Stochastic Dynamic programming
   Williamson notes, Chapter 5
(a) One-sided search and the reservation wage
   Williamson notes, Chapter 7
(b) Diamond’s Cocoanut model
   Williamson notes, Chapter 7
(c) Discrete time Diamond-Mortensen-Pissarides matching model.
   Williamson notes, Chapter 7.2