The course will cover advanced topics in empirical macro.

Grades will be determined by take-home assignments (50% of grade), presentations (25% each of grade), and a final exam (25% of grade).

Course Outline
Students present * papers.

1) Dynamic Factor Models
Origins:

International Business Cycles:


Bayesian vs. Frequentists approaches:

Monetary Policy:
Housing and Monetary Policy:

Structural Dynamic Factor Models

With Stochastic Volatility:

Clustered Factor model Selection

Implementation: http://www.runmycode.org/companion/view/1442

Homework 1: Estimate a multifactor model on interesting data of your choice. Interpret the results economically. Turn in a 3-5 page write up of your results. Model description should be very brief. Provide plots of factors and variance decompositions and interpret the results.

2) Regime Switching DSGE models


Implementation using Junior Maih’s RISE toolbox:
https://github.com/jmaih/RISE_toolbox/blob/master/README.md
Homework 2: Identify a paper in the literature that would be better modeled as a regime switching model. This could be a linear model, or one that was modeled with time varying volatility. Solve the model. Your should turn in 2-5 page write up with the model, description of why it is economically interesting, and then the solved model. Focus on the on how impulse response functions vary across regimes. What did you learn with regime switching that you didn't in the non-markov model?

3) Introduction to small open economy models


4) Nonlinear solution and estimation of DSGE models

*Particle filter:*

*Sigma Point filters:*

Noh, Sanha, 2018, Posterior Inference on Parameters in a Nonlinear DSGE Model via Gaussian-Based Filters, Working paper.

Implementation using Dynare and RISE Toolbox:
http://www.dynare.org
https://github.com/jmaih/RISE_toolbox/blob/master/README.md

Homework 3: Estimate your model from homework 2. Use the RISE toolbox with sigma point filters and a first order solution. Write up a 2-5 page write up of your results describing

5) Financial Constraints, Optimal Policy, Empirics in Emerging Markets


Benigno, Gianluca, Huigang Chen, Christopher Otrok, Alessandro Rebucci, Eric Young, 20?? “Optimal Policy for Macro-Financial Stability”


