Description and Requirements: The goal of the course is to equip students with basic econometric tools to analyze empirical problems in macroeconomics and finance. Students who have not taken and passed 6411, 6412, 6215 and 6216 are welcome to sit in but cannot take the course for credit. There will be no exception.

Evaluation

- Weekly problem sets: 50%
- Midterm: 30%
- Final: 20%

The problem sets will consist of analytical questions and MATLAB/R exercises. We will try to cover as many topics as possible (instead of learning a small number of topics in depth). You will be responsible to fill in the details by consulting textbooks and papers. The exams may include material not covered in class, but that specific readings for them have been assigned.

Useful References

Topics

1. Basic time series concepts and ARMA models: (Hamilton Ch. 3, Hansen Ch. 17).

2. Spectral analysis and HAC estimation. (Hamilton Ch. 6, Hayashi, Ch. 6.6)

3. Detrending and filtering (Hamilton Ch. 4, 15).

4. Regression, ADL models and specification tests: normality, serial correlation, ARCH, structural breaks. (Hamilton 21.1, Stock-Watson Ch 14, 15, Tsay, 2.1, 4.2)

5. VAR (Hamilton Ch.5, Ch. 11.2-11.3):
   - Fernandez-Villaverde-Rubio-Ramirez-Sargent-Watson (2007, AER),

6. Structural breaks and parameter instability: estimation and testing.

7. Unit roots, Beveridge-Nelson decomposition, I(1) asymptotics. (Hamilton Ch. 17, 18).

8. Cointegration: representation, testing, and estimation; (Hamilton Ch.19).


   - Stock-Watson (NBER WP 11467), Bovin-Giannoni (NBER WP 12772).

14. Identification and Estimation of DSGE models: Bayesian methods and Dynare