QUANTITATIVE METHODS
FOR MACROECONOMIC RESEARCH

06—17 March 2017 (Mon—Fri)
09:30 a.m.—12:30 p.m.
Sasana Kijang, Kuala Lumpur

Instructor
Roberto Chang is a Professor of Economics at Rutgers University and a Research Associate at the National Bureau of Economic Research. Before joining Rutgers in 2000, he was a Research Officer at the Federal Reserve Bank of Atlanta. He has also been an Assistant Professor at NYU and a Visiting Professor at Princeton. Professor Chang has published extensively on monetary economics, exchange rate policy, and financial crises. He has served in the editorial boards of the Journal of International Economics and the Journal of Development Economics, and as a member of the Economics Panel of the National Science Foundation. Professor Chang is a native of Peru and holds a Ph.D. in Economics from the University of Pennsylvania.

Objectives of the Course
This course will cover quantitative and empirical methods that have proven to be useful in macro research. We will emphasize applications rather than the development of the methods, but we will also discuss their foundations and intuition.

Because current research in macroeconomics focuses on growth and business cycle phenomena, the appropriate methods are dynamic, time series oriented. Hence we will emphasize time series, recursive methods, and other dynamic tools. Given its increasing prominence, we will cover some basic numerical and computational issues as well. By the end of the course, course participants should be familiar with a quantitative and empirical arsenal applicable to their own research projects.¹

Course Topics

1. Growth vs Cycles. Dealing with Trends

2. Univariate Time Series Analysis

¹ Working knowledge of a computer programming language, such as GAUSS or MATLAB will be desirable. Knowledge of an econometrics package such as RATS will be also useful.
3. Multivariate Time Series: VARs and Related Topics

4. State Space Methods: Kalman, Applications

5. Numerical Topics: Optimization and Equation Solving

* Generalized Method of Moments

7. Dynamic Programming and Recursive Methods
   Applications.


9. Maximum Likelihood and Bayesian Estimation of DSGE Models

Reading List

Depending on topic, we will use sections of the following references:


The most essential sources for our purposes are marked with an asterisk (*)