TENTATIVE SYLLABUS (This Version: April 12, 2020)
B.E. International Program, Thammasat University

EE511 Selected topics in Economic Theory 1 SUMMER 2019

Instructor:	**Email: (Preferred Method)**
Kanit Kuevibulvanich	kanit@uchicago.edu
Wisarut Suwanprasert	wisarut.suwanprasert@mtsu.edu

Course Description:
This course is an introduction to dynamic models for macroeconomists in both theoretical and empirical aspects. It provides wide perspectives of what to expect of coursework in macroeconomics at the Masters and PhD programs around the world. It also provides stepping stones for undergraduate students to fulfill the technical challenges in economic policy analysis. This course will attempt to strike the optimal balance of theoretical model, mathematics, simulation methods, and empirical analysis while rigorously emphasizing on the economic intuitions.
The first third of the course focuses on methods for neoclassical macroeconomic models. The goal is to familiarize students to the methods employed in modern macroeconomic analysis. Topics include macroeconomic data, neo-classical growth models, general equilibrium models, consumption-saving models, real business cycles, financial economics and asset pricing, overlapping generations models, and the introduction of money.
The second third of the course focuses on applications. Building on the tools and methods developed in the core courses, this course analyzes fiscal and monetary policies and other topical issues. The goal is to familiarize students to the rigorous applications of the theories and methodologies in analyzing macroeconomic policies. Rather than diving deep into a single topic, we will take a helicopter-tour approach. Students will also be exposed to theoretical, numerical and empirical methods to answer policy questions.
The last third of the course introduces students to the search-theoretical framework, which is the prevalent model in the economy with market frictions. We will discuss the general idea of search theory, with applications to labor market and money.

Learning Objectives:
At the end of this course, student should be able to

- Explain and obtain the solutions of the neoclassical macroeconomic models
- Apply the neoclassical macroeconomic models in economics policy analysis, through simulation or empiri-cal methods
- Explain and analyze the models for market with frictions, using search-theoretical framework

Prerequisites: (1) EE312 or EE412; (2) EE320 and MA217, or EE421, or EE422; (3) Primer knowledge in statistics and some programming experience

Textbooks, Reading Materials, and Computer Software:

- Matthias Doepke, Andreas Lehnert, & Andrew W. Sellgren, Macroeconomics [DLS, hereafter]
- Peter Bondarenko & Kotaro Yoshida, Econ 20200: Elements of Economic Analysis-3 Lecture Notes [LNA]
- Peter Bondarenko & Kotaro Yoshida, Econ 20300: Elements of Economic Analysis-IV Lecture Notes [LNB]
- Robert J. Barro, Macroeconomics, 5th ed., MIT Press, 1997 [RB]
- Lars Ljungquist, & Thomas J. Sargent, Recursive Macroeconomic Theory, 3rd ed. (1st or 2nd ed. is also fine), MIT Press, 2012 [LS]
- David Romer, Advanced Macroeconomics, 4th ed. (2nd or 3rd ed. is also fine), McGraw-Hill [DR]
- Frederic S. Mishkin, The Economics of Money, Banking and Financial Markets, 12th ed. (other recent editions are substitutable), Pearson, 2018 [FM]
- Michael Wickens, Macroeconomic Theory: A Dynamic General Equilibrium Approach, 2nd ed. (1st ed. is also fine), Princeton [MW]

- Stephen D. Williamson, Macroeconomics, 6th ed. (5th ed. is also fine), Pearson [SW]
- Other published and working-paper journal articles to be posted

DLS manuscript and LN are posted on Canvas. Additional reading materials and journal articles will also be posted. No single textbook is sufficient to cover all the materials that would be covered in this class. You are **not** required to buy any of the textbooks. I will refer to the textbook chapters and reading materials corresponding to each topic. You can also access the journal articles referred in class using university network. I will also post the handwritten notes as presented after each lecture.

There will be assignments that require you to use MATLAB. Please install MATLAB on your computer. You will also need to install Dynare module in MATLAB, which is available free-of-charge at http://www.dynare.org. Please refer to the website on how to install and set the directory path so that Dynare is working with MATLAB on your computer.

Evaluation:

Weekly Problem Sets or Project – Issued weekly on average, **due in class as noted on each problem set**

Topics and Course Outline (Subject to Change due to Time Constraints and Class Progress)

- **Introduction:** Macroeconomic Variables and Measurement, Stock-Flow Variables, Microeconomics Founda-tion, Difference Equations, Lagrangian Methods (LNA #1; Notes)
- **Labor Supply:** Crusoe's Island Consumption-Labor Model (DLS Ch. 2; RB Ch. 2; LNA #2)
- **Economic Growth:** Kaldor's Stylized Facts, Solow Growth Model,

  Dynamic Inefficiency, Model Calibration and Data Matching Growth Accounting, Augmented Solow Growth Model, Human Capital and Endogenous Growth Model (DLS Ch. 11; RB Ch. 11; MW Ch. 3; DR Ch. 1, 3; LNA #14-15; Notes)
- **Consumption-Saving Problem:** Two-period Model, Present and Future Values, Substitution and Wealth Effects, Permanent Income Hypothesis, Credit Market Imperfection (SW Ch. 9-10; LNA # 1-6)
- **General Equilibrium:** First Welfare Theorem, Centralized vs.

  Decentralized Solution, Equilibrium Definition, Market Clearing Condition (DLS Ch . 3, 5-6; Extra Notes)
- **Neoclassical Growth Models:** The Lagrangian Method for Infinite-Horizon Model, State-vs-Control Vari-ables, Present-vs-Future Value, Time Value of Money, Phase Diagram and Dynamic Analysis (MW Ch. 2, 4; DLS Ch. 3, 5-6; LNA #6-9; DR Ch. 2A)
- **Applications of Neoclassical Growth Models:** Programming and Solution Using MATLAB/Dynare, Elastic Labor Supply Total Factor Productivity,

  Uncertainty, Shocks, Real Business Cycles
- **Financial Economics:** Risk Aversion, Consumption-CAPM Model,

  Equity Premium Puzzle, Lucas Tree and Asset Pricing Models (MW Ch. 2, 4, 11, 16; DLS Ch. 3, 5-6; LS Ch. 8, 13; LNA #16-18)
- **Fiscal Policy in the Neoclassical Growth Model:** Government Expenditure, Lump-sum Tax, The Multiplier, Proportional/Distortional Taxes, Laffer Curve, Household Optimization, Dynamic Analysis, Consumption Equivalent Variation and Welfare Analysis (LNB #1-3, DLS Ch. 12-13, DR Ch. 2A, MW Ch. 5-6, Extra Notes)
- **Introduction to Experiments:** Measurement, Treatment Effects (Extra Notes)
- **Government Debt:** Ricardian Equivalence Theorem, Credit Market Imperfection and Welfare (Extra Notes, LNB #6-7, DLS Ch. 14, RB Ch. 14, MW Ch. 5, SW Ch. 9-10)

- **Optimal Taxation and Information Economics:** Ramsey Optimal Taxation, New Dynamic Public Finance, Progressive Tax System, Welfare Programs (Extra Notes)

  (LNB #8-9, Extra Notes)
- **Overlapping Generations Models:** With Exogenous Income and Production, First Welfare Theorem Failure, Social Security, Lifecycle Model, Credit Scoring Model (DR Ch. 2B; MW Ch. 6.3; LS Ch. 9; LNB #5, DLS Ch. 12, SW Ch. 10)
- **Introduction to Money:** Baumol-Tobin Model, Cash-in-Advance Model, Friedman Rule (DLS Ch. 4, 8; RB Ch. 4; SW Ch. 11; MW Ch. 8; LNA #10-13) Money-in-Utility Model, Log-Linearization Technique

  (LNB #14, DLS Ch. 8, MW Ch. 8, Class Notes)
- **Money Non-Neutrality:** Lucas Price Misperception Model, Intro to New Keynesian Model (LN #15, DLS Ch. 19, MW Ch. 8) (NK Model - LN #18, Slides)
- **Optimal Monetary Policy:** Time Inconsistency, Monetary Policy in Practice, Time-Series Econometrics – Vector Autoregression Model (VAR), Banking and Macroeconomics, The Federal Reserve, Bank's Balance Sheet (LN #16, FM Ch. 13-16, DLS Ch. 19)
- **Fiscal Theory of Price Level:** Cagan Model of Inflation, Seigniorage Problem, Inflation Laffer Curve, Central Bank Independency, Monetary Policy under Fiscal Authority (LNB #11-14, DLS Ch. 18, MW Ch. 13)
- **Introduction to Incomplete Market, Heterogeneous Agent Model, and Inequality:** Bewley-Huggett-Aiyagari Model
- **Matching Models**
  - Non-Transferable utility: Gale and Shapley algorithm
  - Transferable utility: Positive Assortative Matching
- **Labor Search Models**
  - Basic model: McCall model
  - Transitions to Unemployment
  - Job-to-Job Transitions
  - Matching function
  - Bargaining
  - Efficiency
- **Money Search Models**
  - Commodities (indivisible goods) as Money: Kiyotaki and Wright (1989)
  - Assets (divisible goods) as Money
  - Terms of Trade: Shi (1995) and Trejos and Wright (1995)
  - Intermediaries: Rubinstein and Wolinsky (1987) and Duffie et al. (2005)
  - A new workhorse model: Lagos and Wright (2005)
  - Price Dispersion and Inflation: Diamond Paradox; Burdett and Judd (1988)