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Syllabi for Different Courses

(Sample of possible courses that I could teach)

I. PhD-level courses

Growth and Development
Macroeconomic Theory I
Macroeconomic Theory II
Numerical Methods
Topics in International Macroeconomics

II. Undergraduate-level courses

Advanced Macroeconomics
Advancing Development
Intermediate Macroeconomics
International Economics

III. Sophomore seminars for undergraduate students in social sciences

Globalization and Society
Poetry and Science
Public Intellectuality

PhD-level courses

Macroeconomic Theory I *Economic Growth and Business Cycles*

GOALS

Our goal in this course is to understand tools, models and techniques one needs to know in order to read and write academic papers in macroeconomics. Modern macroeconomics treats an equilibrium as a sequence or, more generally, as a probability distribution over sequences for prices and quantities. The sequences are indexed by time, so that equilibrium is a probabilistic model for economic time series.

An equilibrium model provides a mapping from parameters of preferences, technologies, endowments, and *rules of the game* (parameters that are meaningful to economists) to the probability model for time series. By *inverting* this mapping, economists interpret observations on economic time series. The rigor of the logical connection between theory and observations that the mapping provides is an attractive feature of dynamic equilibrium models.

The tool now used to study business cycles and economic growth is the discipline of *quantitative dynamic general equilibrium*. In this discipline, given the question or issue at hand, an explicit model economy is written down and the answer to the question determined for that model economy. Theory, the question, and the available data dictate the choice of model economy used in application. In contrast to a long tradition of viewing business fluctuations as disequilibrium phenomena, in contemporary stochastic dynamic general equilibrium macroeconomic models the cycle emerge from the stochastic processes that are essential elements of the models. Thus random, but persistent, changes in the factors that determine the level of output give rise to fluctuations that approximate those observed in real economies.

Quantitative dynamic general equilibrium methods are needed to show that growth theory implies business fluctuations. This is not something that one can derive without the use of quantitative dynamic general equilibrium analysis. For example, Kydland and Prescott (1982) determined how big the variance of the persistence component of technology shock had to be to generate fluctuations of the magnitude observed in the United States in the 1954-1980 period. Subsequent estimates of this variance (Prescott 1986) found that the variance was of this magnitude. This is a success for the discipline of quantitative general equilibrium and for growth theory, a theory that was developed to account for the secular movements in the aggregate time series and not to account for business cycles.

EVALUATION

Students will complete five problem sets throughout the semester which will be graded and returned. Some of the problems will require written and mathematical analysis; others will involve numerical and computational analysis. I will assign them once the appropriate material has been covered, and you will have one week to complete them. Homework problems are going to be difficult and long, and they will involve computer programming in some cases. Answers

will either be provided in TA discussion sessions, or in answer guides that will be made available on my website.

I encourage you to cooperate as much as possible with your classmates and to talk to me whenever you get stuck on an assignment or have questions about the material. Intellectual interaction with other Ph.D. students is crucial for becoming a good economist. However, each problem set submitted for grading must ultimately be a student's own work. You should start learning how to use Matlab right now. You should also start reading the basic topology section of a senior-level real analysis textbook. The TA will have sessions on Matlab.

There will be a midterm examination and a final examination which is held during the regular examination period. If you cannot attend the midterm due to a verifiable medical emergency, then the weight of the midterm will be added to the final examination. Otherwise, a grade of 0 will be assigned to the midterm. If you cannot attend the final examination due to a verifiable medical emergency, then a makeup examination will be set as soon as possible. Otherwise, a grade of 0 will be assigned to the final exam.

Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Problem Sets	30%
Midterm	30%
Final Exam	40%

REQUIRED REFERENCES

The required textbooks for the course are:

Acemoglu, Daron. *Introduction to modern economic growth.* Cambridge, Princeton University Press, 2009.

Ljungqvist, Lars and Sargent, Thomas J. *Recursive Macroeconomic Theory.* Cambridge, MA: MIT Press, 2004 (2nd Edition).

Stokey, Nancy L.; Lucas, Robert E., Jr. and Prescott, Edward C. *Recursive Methods in Economic Dynamics.* Cambridge, MA: Harvard University Press, 1989.

Some additional books that will prove useful are:

Cooley, Thomas F. (Eds.). *“Frontiers of Business Cycle Research.”* Princeton University Press, 1995.

Heer, Burkhard and Maussner, Alfred. *Dynamic general equilibrium modeling: computational methods and applications.* Berlin; New York, NY: Springer, 2005.

Judd, Kenneth L. *Numerical methods in economics.* Cambridge, MA: MIT Press, 1998.

Kehoe, Timothy J. and Prescott, Edward C. (Eds.). *“Great Depressions of the Twentieth Century.”* Minneapolis, Minnesota: Federal Reserve Bank of Minneapolis, 2007.

COURSE OUTLINE

I History of Modern Macroeconomics

Macroeconomic issues are central concerns in economics. Macroeconomics underwent a revolution in the 1970s and 1980s, due to the introduction of the methods of rational expectations, dynamic optimization, and general equilibrium analysis into macroeconomic models, to the development of new theories of economic fluctuations, and to the introduction of sophisticated methods for the analysis of economic time series.

Readings:

Blanchard, Olivier. “What Do We Know about Macroeconomics that Fisher and Wicksell Did Not?” *Quarterly Journal of Economics*, November 2000, 115(4), pp. 1375-1409.

Blanchard, Olivier. “The State of Macro.” *Annual Review of Economics*, 2009, 1, pp. 209-228.

Kydland, Finn E. “Quantitative Aggregate Economics.” *American Economic Review*, December 2006, 96(5), pp. 1373-83.

Phelps, Edmund S. “Macroeconomics for a Modern Economy.” *American Economic Review*, June 2007, 97(3), pp. 543-61.

Woodford, Michael. “Revolution and Evolution in Twentieth-Century Macroeconomics.” Unpublished Manuscript, 1999.

Woodford, Michael. “Convergence in Macroeconomics: Elements of the New Synthesis.” *American Economic Journal: Macroeconomics*, January 2009, 1(1), pp. 267-79.

II Optimal Growth

The centerpiece of the theory of economic dynamics is the classical optimal growth model. It consists of a central planner maximizing the sum of discounted utilities of consumption subject to a convex one-sector production set. These premises, resting largely on convexity assumptions, yield a simple and elegant model explaining many aspects of capital accumulation. In particular, there is a unique optimal growth path which, independent of the initial stock of capital, converges to the unique steady-state equilibrium level of capital. Furthermore, the convexity assumptions, in preferences and in production, imply that the necessary first-order conditions, i.e., the Euler equation and the transversality condition, are also sufficient for optimality.

Readings:

“Economic Growth and Economic Development: The Questions”, **Acemoglu**, Chapter 1

“The Solow Growth Model”, **Acemoglu**, Chapter 2

“The Solow Model and the Data”, **Acemoglu**, Chapter 3

“Foundations of Neoclassical Growth”, **Acemoglu**, Chapter 5

“The Solow–Swan Model”, **Barro and Sala-i Martin**, Chapter 1

“A Deterministic Model of Optimal Growth”, **Stokey and Lucas**, Chapter 2.1

Jones, Charles I. and Scrimgeour, Dean. “A New Proof of Uzawa’s Steady-State Theorem.” *Review of Economics and Statistics*, February 2008, 90(1), pp. 180-182.

Uzawa, H. “Neutral Inventions and the Stability of Growth.” *Review of Economic Studies*, February 1961, 28(2), pp. 117-124.

III Dynamic Programming under Certainty and Stochastic Models

To analyze dynamic equilibrium models, we must first be able to characterize solutions to dynamic optimization problems since the behavior of agents in these models will be determined by the solutions to such problems. We will consider a technique for solving dynamic optimization problems that fall into a particular class called *stationary discounted dynamic programming* problems.

Readings:

Markov Chains

“Markov Chains”, **Ljungqvist and Sargent**, Chapter 2

“Markov Processes”, **Stokey and Lucas**, Chapter 8

Flodén, Martin. “A Note on the Accuracy of Markov-Chain Approximations to Highly Persistent AR (1) Processes.” *Economics Letters*, June 2008, 99(3), pp. 516-520.

[Matlab code](#)

Tauchen, George. “Finite State Markov-Chain Approximations to Univariate and Vector Autoregressions.” *Economics Letters*, 1986, 20(2), pp. 177-181.

Applications

“Stochastic Dynamic Programming”, **Acemoglu**, Chapter 16

“Stochastic Growth Models”, **Acemoglu**, Chapter 17

“Sequential Problems”, **Ljungqvist and Sargent**, Chapter 3.1

“Stochastic Control Problems”, **Ljungqvist and Sargent**, Chapter 3.2

“Practical Dynamic Programming”, **Ljungqvist and Sargent**, Chapter 4

“Dynamic Programming under Certainty”, **Stokey and Lucas**, Chapter 4

“Applications of Dynamic Programming under Certainty”, **Stokey and Lucas**, Chapter 5

“Stochastic Dynamic Programming”, **Stokey and Lucas**, Chapter 9

“Applications of Stochastic Dynamic Programming”, **Stokey and Lucas**, Chapter 10

IV Competitive Equilibrium

The fundamental concept that markets are interrelated and therefore the equilibrium of the economy is characterized by simultaneous equality of supply and demand on all markets is due to Walras (1874). The concept as further developed and expounded by Pareto (1896, 1909). The case that equilibrium exists was made plausible by showing that the number of equations equaled the number of unknowns. The optimality of the competitive equilibrium was argued by both Walras and Pareto. General equilibrium theory describes the equilibrium and disequilibrium arising from the interaction of all economic agents in all markets.

The principal objective of general equilibrium (GE) theory is to study the allocation of resources via system of markets. If all activity in an economy could be viewed as taking place in a single period then it would perhaps be reasonable to assume that markets are complete; that is, there is a market and associated price for each good. This is the environment of the classical theory resource allocations which finds its most elegant synthesis in the Arrow-Debreu theory.

Classical GE theory as synthesized by Arrow-Debreu has the property of being theoretically the most elegant part of the economic theory. It is elegant, because within the context of a precisely formulated set of hypotheses it leads to a clear and simple explanation of how an idealized system of markets allocates resources and achieves what amounts to a best possible solution to the problem of resource allocation. GE crystallizes a classical tradition in economic theory that has its origin in Adam Smith’s theory of the invisible hand, by which a competitive system with market prices coordinates the otherwise independent activities of consumers and producers acting purely in their self-interest.

Readings:

“Pareto Optima and Competitive Equilibria”, **Stokey and Lucas**, Chapter 15

“Applications of Equilibrium Theory”, **Stokey and Lucas**, Chapter 16

“Recursive (Partial) Equilibrium”, **Ljungqvist and Sargent**, Chapter 7

“Equilibrium with Complete Markets”, **Ljungqvist and Sargent**, Chapter 8

“Recursive Competitive Equilibrium”, **Ljungqvist and Sargent**, Chapter 12

“Recursive Methods for Computing Equilibria in Business Cycle Models”, **Hansen and Prescott**

V Real Business Cycle Models

The real business cycle (RBC) approach to macroeconomic fluctuations seeks to explain the main stylized facts of the business cycle by building stochastic artificial economy models in which economic equilibria are the outcomes of the interaction of rational agents who solve explicit intertemporal maximization problems. The first generation of RBC models typically specified a closed economy with a single production sector and in which shocks to aggregate production function were the only type of random disturbance. These simple models were consistent with many aspects of the cyclical behavior of industrialized economies. More recently, researchers have focused their attention on two major discrepancies between the properties of simple RBC models and the U.S. data, both of which are related to the labor market.

First, total hours worked are much more volatile compared to average labor productivity in the data than in the simple RBC models. Second, simple RBC models predict a high correlation between hours worked and average labor productivity which is absent from the data. These two stylized facts of the labor market constitute a puzzle which RBC models have had trouble solving. Various modifications have been proposed to the baseline RBC model in order to generate predictions which are more compatible with the data. As illustrated in a unified framework by Hansen and Wright (1992), RBC models can be made to generate a higher volatility of hours either by introducing preferences that are nonseparable between leisure in different time periods as in Kydland and Prescott (1982) or by introducing indivisibilities in the labor-leisure tradeoff as in Hansen (1985) and Rogerson (1988).

Readings:

“Economic Growth and Business Cycles”, Cooley and Prescott

“Real Business Cycles”, Ellen R. McGrattan

(The note has been prepared for The New Palgrave Dictionary of Economics, 2nd edition)

Hodrick, Robert J. and Prescott, Edward C. “Postwar U.S. Business Cycles: An Empirical Investigation.” *Journal of Money, Credit and Banking*, February 1997, 29(1), pp. 1-16.

Prescott, Edward C. “Theory Ahead of Business-Cycle Measurement.” *Carnegie-Rochester Conference Series on Public Policy*, Autumn 1986, 25, pp. 11-44.

Rebelo, Sergio. “Real Business Cycle Models: Past, Present and Future.” *Scandinavian Journal of Economics*, June 2005, 107(2), pp. 217-238.

Williamson, Stephen D. “Real Business Cycle Research Comes of Age: A Review of Essay.” *Journal of Monetary Economics*, August 1996, 38(1), pp. 161-170.

VI OLG Models

Competitive equilibria in economies of overlapping generations are different from competitive equilibria in economies that extend over finitely many periods, finite economies for short. These differences concern the properties of competitive equilibria, such as existence, optimality and determinacy or local uniqueness; and the phenomena compatible with competitive equilibria, such as net aggregate debt or fiat money with a positive price. Ever since the introduction of the

model of overlapping generations by Allais (1947) and Samuelson (1958), economic theories have striven to isolate the reasons for the differences between this model and the definitive model of a finite economy elaborated by Arrow (1951), Debreu (1951, 1970) and Arrow and Debreu (1954).

The OLG model of Allais and Samuelson retains the methodological assumptions of agent optimization and market clearing from the Arrow-Debreu model, yet its equilibrium set has different properties: Pareto inefficiency, indeterminacy, positive valuation of money, and a golden rule equilibrium in which the rate of interest is equal to population growth (independent of impatience). The OLG model is used to analyze bubbles, social security, demographic effects on stock returns, the foundations of monetary theory, Keynesian vs. real business cycle macro models, and classical vs. neoclassical disputes.

Readings:

“Overlapping Generations Models”, **Ljungqvist and Sargent**, Chapter 9
Geanakoplos, John. “Overlapping Generations Models of General Equilibrium.” Cowles Foundation Discussion Paper No: 1663, Yale University, May 2008.

“Intertemporal General Equilibrium Models”, **Timothy J. Kehoe**

“Growth with Overlapping Generations”, **Acemoglu**, Chapter 9

Macroeconomic Theory II

Selected Topics

GOALS

The primary goal of this course is to motivate and initiate innovative research in the field of macroeconomics. You will find that we focus heavily on issues, models, and quantitative work at the intersection of different important topics:

- How do movements in the distribution of income and wealth affect the Macroeconomy?
- What effects do business cycles have on the distributions of income, wealth, consumption, and, especially, welfare across different types of consumers?
- Are disadvantaged consumers--for example, the poor and the unemployed--more exposed to business cycle risk than the rich and the employed?
- Even though physical capital and more advanced technologies are now regarded as the relative complements of human capital, were they so in the more distant past?
- If technological advance and human skill were not relative complements in the distant past but are today, when did they become so?
- What does the unemployment rate vary over time and across countries?
- What is the behavior of aggregate labor market variables such as job destruction, job creation and unemployment?
- How do different labor market policies affect aggregate outcomes? Are they desirable?

Answers to such questions are the subject of this course.

EVALUATION

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I encourage you to cooperate as much as possible with your classmates and to talk to me whenever you get stuck on an assignment or have questions about the material. However, each problem set submitted for grading must ultimately be a student's own work.

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Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Problem Sets	30%
Midterm	30%
Final Exam	40%

BOOKS

Heer, Burkhard and Maussner, Alfred. *Dynamic general equilibrium modeling: computational methods and applications*. Berlin; New York, NY: Springer, 2005.

Ljungqvist, Lars and Sargent, Thomas J. *Recursive Macroeconomic Theory*. Cambridge, MA: MIT Press, 2004.

Pissarides, Christopher A. *Equilibrium Unemployment Theory*. Cambridge, MA: MIT Press, 2000.

Stokey, Nancy L.; Lucas, Robert E., Jr. and Prescott, Edward C. *Recursive Methods in Economic Dynamics*. Cambridge, MA: Harvard University Press, 1989.

COURSE OUTLINE

I Asset Pricing

The Arrow-Debreu model of an economy seems to describe a static world without time or uncertainty. Hicks (1939), in his 'Value and Capital' already criticized the steady-state analysis of Walras as a highly deceptive way of analyzing the intertemporal economy we live in. Arrow and Debreu, it seems, merely formalized the highly deceptive model developed by Walras. However, as Chapter 7 of Debreu's 'Theory of Value' shows a simple redefinition of a commodity allows one to obtain a theory of time and uncertainty which is formally identical to the static general equilibrium theory. Modeling time in the Walrasian tradition seems fairly straightforward. Even before Arrow and Debreu's work, Irving Fisher (1930) wrote about the theory of interest and developed (a somewhat imprecise) dynamic general equilibrium model.

The main idea is that a tomato in summer is a different good than a tomato in winter. A commodity is not only identified by its physical characteristics (i.e. a tomato) but also by the date. The relative price between goods today and goods tomorrow is the interest rate. Fisher's model becomes interesting if one makes additional assumptions on preferences and if one examines models with infinite time horizon. As early as 1953 Arrow found a brilliant way to incorporate uncertainty into the model. He introduced 'states of the world' as a complete description of a date-event. A contract for the transfer of a commodity specifies now, in addition to its physical properties, its location and its date, an event of occurrence (state of the world) of which the transfer is conditional (so a tomato when it rains tomorrow is a different good than a tomato when the sun shines).

Once uncertainty and time is incorporated into the model one has to ask, however, if it is realistic to assume that at time zero there are markets for all commodities and agents buy their

consumption bundles for the (possibly infinite) future. Instead, Arrow suggested that agents trade financial assets instead. This was the birth of modern asset pricing. In 1978 Lucas published a paper on asset pricing that proved highly influential in macro-economics mainly because it provided a simple way to bring the basic general equilibrium model to data.

Ljungqvist and Sargent, Chapter 13

Jermann, Urban J. “Asset Prices in Production Economies” *Journal of Monetary Economics*, April 1998, 41(2), pp. 257-275.

Mehra, Rajnish and Prescott, Edward C. “The Equity Risk Premium: A Solution?” *Journal of Monetary Economics*, July 1988, 22(1), pp. 133-136.

Mehra, Rajnish and Prescott, Edward C. “The Equity Premium: A Puzzle” *Journal of Monetary Economics*, March 1985, 15(2), pp. 145-161.

Lucas, Robert E. “Asset Prices in an Exchange Economy.” *Econometrica*, November 1978, 46(6), pp. 1429-1445.

II Heterogeneous Agents Models

There are many questions in economics for which heterogeneous-agent dynamic models have to be used to provide answers. Examples of these questions where the desired answer is quantitative are as follows:

- What changes in the distribution of wealth will occur if the tax system is changed from progressive to proportional?
- What increases in taxation are needed to maintain the current level of US social security benefits under current population patterns?
- What type of policy changes can be expected from changes in constitutions?

All these questions require models where the households that populate are not identical. With respect to the first question, note that the key property of progressivity of the tax system is that different households face different tax rates. For the second question, the age distribution of the population determines the amounts collected and paid by the administrators of social security. Finally, the determinants of policy should be affected by the relations between different groups of households that do not have the same preferences over policies.

Computation of equilibria in these models is usually substantially more difficult than in standard representative agent models, as equilibrium laws of motion become functions not only of aggregate variables, but also of the distribution of these variables across different types of agents. Solving for the laws of motion of such distributions is a nontrivial task.

General Surveys

Heathcote, Jonathan; Storesletten, Kjetil and Violante, Giovanni L. “Quantitative Macroeconomics with Heterogeneous Households.” *Annual Review of Economics*, 2009, 1, pp. 319-354.

Computation of Stationary Distributions

Heer and Maussner, Chapter 5

Aiyagari, S. Rao. “Uninsured Idiosyncratic Risk and Aggregate Saving.” *Quarterly Journal of Economics*, August 1994, 109(3), pp. 659-84.

Huggett, Mark. “The Risk-Free Rate in Heterogeneous-Agent Incomplete-Insurance Economies.” *Journal of Economic Dynamics and Control*, September-November 1993, 17(5-6), pp. 953-69.

Dynamics of the Distribution Function

Heer and Maussner, Chapter 6

Krusell, Per and Smith, Anthony A., Jr. “Income and Wealth Heterogeneity in the Macroeconomy.” *Journal of Political Economy*, October 1998, 106(5), pp. 867-96.

Ríos-Rull, José-Víctor. “Computation of Equilibria in Heterogeneous-Agent Models.” In Ramon Marimon and Andrew Scott eds., *Computational Methods for the Study of Dynamic Economies*, Oxford University Press, 1999, pp. 238-264.

III Unemployment, Labor Market Fluctuations, Search and Matching

In the 1970s, European unemployment started increasing. It increased further in the 1980s, to reach a plateau in the 1990s. It is still high today, although the average unemployment rate hides a high degree of heterogeneity across countries.

The unemployment rate in the U.S. fluctuates around six percent, and is strongly countercyclical, sometimes with large fluctuations. Vacancies (measured either as help-wanted ads in the United States, or as job openings in other countries) are even more strongly procyclical, so that vacancy-unemployment ratio is procyclical. Short-run fluctuations in vacancies and unemployment correspond to a Beveridge curve, with a downward sloping relationship

Ljungqvist and Sargent, Chapter 6, 26

Ljungqvist, Lars and Sargent, Thomas “Understanding European Unemployment with a Representative Family Model.” *Journal of Monetary Economics*, November 2007, 54(8), pp. 2180-2204.

Ljungqvist, Lars and Sargent, Thomas “Understanding European Unemployment with Matching and Search-Island Models.” *Journal of Monetary Economics*, November 2007, 54(8), pp. 2139-79.

Mortensen, Dale T. and Pissarides, Christopher A. “Technological Progress, Job Creation, and Job Destruction.” *Review of Economic Dynamics*, October 1998, 1(4), pp. 733-53.

Nickell, Stephen. “Unemployment and Labor Market Rigidities: European versus North America.” *Journal of Economic Perspectives*, Summer 1997, 11(3), pp. 55-74.

Pissarides, Christopher A. *Equilibrium Unemployment Theory*. Cambridge, MA: MIT Press, 2000.

Rogerson, Richard; Shimer, Robert and Wright, Randall. “Search-Theoretic Models of the Labor Market: A Survey.” *Journal of Economic Literature*, December 2005, 43(4), pp. 959-88.

IV Changes in the Structure of Wages and Models of Technology

Wage and income inequality have increased considerably in the U.S. over the past 25 years. This makes an analysis of changes in the wage structure interesting in its own right. Moreover, changes in the wage structure also imply changing labor market prices of different types of skills. Therefore, studying changes in the wage structure will be informative about the changes in the demand for different types of skills and technological developments. Finally, changes in the wage structure will also lead to different incentives for human capital investments, which we might want to understand.

Recent technological advances and a widening of the wage structure have led many to conclude that technology and human capital are relative complements. Over the past 60 years, the U.S. relative supply of skills has increased, but: a) there has also been an increase in the college premium, and b) this increase accelerated in the late 1960s, and the skill premium increased very rapidly beginning in the late 1970s.

Acemoglu, Daron. “Why Do New Technologies Complement Skills? Directed Technical Change and Wage Inequality.” *Quarterly Journal of Economics*, November 1998, 113(4), pp. 1055-89.

Acemoglu, Daron. “Directed Technical Change.” *Review of Economic Studies*, October 2002, 69(4), pp. 781-809

Acemoglu, Daron. “Patterns of Skill Premia.” *Review of Economic Studies*, April 2003, 70(2), pp. 199-230.

Acemoglu, Daron and Shimer, Robert. “Wage and Technology Dispersion.” *Review of Economic Studies*, October 2000, 67(4), pp. 585-607.

He, Hui and Liu, Zheng. “Investment-Specific Technological Change, Skill Accumulation, and Wage Inequality.” *Review of Economic Dynamics*, April 2008, 11(2), pp. 314-34.

Krusell, Per; Ohanian, Lee E.; Rios-Rull, Jose-Victor and Violante, Giovanni L. “Capital-Skill Complementarity and Inequality: A Macroeconomic Analysis.” *Econometrica*, September 2000, 68(5), pp. 1029-53.

GROWTH and DEVELOPMENT

GOALS

Perhaps the most challenging question in development economics is why some countries are so much poorer than the U.S. During the last twenty years the study of the forces that shape the rate of economic growth became one of the most active areas of research in economics. On the theoretical front, researchers produced a variety of models in which sustained growth can take place in the absence of exogenous growth in productivity. On the empirical front, there was an intense search for variables that correlate with growth performance in variants of the Summers and Heston data set. Three related but conceptually distinct issues lie at the heart of this research:

- World growth
- Country growth
- Dispersion in income levels

Why did so many macroeconomists suddenly divert their efforts from the study of business cycles to the quest for a better understanding of the growth process? Lucas (1987) provided a rationale for this reallocation of research effort. He confronted an agent with preferences that are standard in macro models with the question of how much consumption he would be willing to give up to eliminate the fluctuations in his consumption associated with business cycles. The answer was – very little, suggesting that the welfare cost of business fluctuations is very small. In contrast, this hypothetical agent would be willing to forgo a significant fraction of his consumption to live in an economy which expands at a faster rate.

Lucas' (1987) calculation has been criticized for being appropriate only in a world of complete markets. The costs of business cycles could potentially be higher if there are idiosyncratic shocks that the agents cannot insure against. Recent work suggests that Lucas's calculation is likely to hold up as well in incomplete markets. Lucas's welfare calculation suggested that there is much more to be gained from understanding the determinants of the growth process than from fine tuning our understanding of what drives economic fluctuations (Rebelo, 2001).

The primary goal of this course is to motivate and initiate innovative research in the field of economic growth and development. Hence, lectures are complemented by student presentations in class of research papers in the literature, and by the completion and presentation of an original research project. You will find that we focus heavily on issues, models, and quantitative work at the intersection of economic growth and development.

EVALUATION

Class Presentations

Each student will present papers. You will have 45 minutes for the presentation. Each presentation should direct the questions such as

What question is this paper trying to answer?

What sorts of tools does the author use to answer the question?

What is the answer that the author comes up with and does it make sense to you?

You should derive the key equations and analytical expressions of the paper. Moreover, you should clearly explain the computational experiments and sketch the details of the numerical algorithm. Each person's talk will be graded on its technical content, organization, clarity, thoroughness, and effectiveness. How well you handle questions from the other students will also be taken into account.

Tips on Preparing for the Presentations

Communication of results is an essential component of economic research. Many economists prefer attending conferences, workshops, and seminars to reading working papers and journal articles as a way of picking up ideas. The fundamental ingredient in a good presentation is preparation. Try to practice the presentation more than once. When you are preparing slides, make sure that the font is large enough to be readable. Since time is precious to you in your presentation, you should think carefully about how you want spend it.

Long introductions are almost always a bad idea. What the audience usually wants to learn during the introduction is the question that you intend to answer, why the question and the answer are important, and, probably, what your answer is going to be. In general, audiences do not like research presentations to be mysterious. Surprise endings are fine for novels and films, but usually not for economic research. You will learn a lot in preparing for your presentation. You can also learn a lot at the class from the other presentations.

The final draft of the written research project is due on the scheduled final examination date. The research paper cannot be the same as that submitted to another class, in this or any other semester.

Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Class Presentations	40%
Written Research Project	30%
Final Exam	30%

REQUIRED REFERENCES

The required textbooks for the course are:

Acemoglu, Daron. *Introduction to modern economic growth.* Cambridge, Princeton University Press, 2009.

Stokey, Nancy L.; Lucas, Robert E., Jr. and Prescott, Edward C. *Recursive Methods in Economic Dynamics.* Cambridge, MA: Harvard University Press, 1989.

COURSE OUTLINE

What follows is a list of papers for this course. This list is much too long by design. The intention is to give you some sort of an organization of the literature along with a guide, by topic, of some of the recent work in the area in case you are interested in pursuing a particular topic in more detail. This list is not complete.

I Data and the Neoclassical Model of Development

Of course, all good science is a combination of inductive and deductive methods, a constant interchange between data and theory. It simply cannot be asserted that either one or the other comes “first” as a matter of principle.

1 Data Sources: An Introduction

Conference Board and Groningen Growth and Development Centre. *Total Economy Database*. November, 2007.

Heston, Alan; Summers, Robert and Aten, Bettina. Penn World Table Version 6.2. Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, September 2006.

Organization for Economic Cooperation and Development (OECD). *The OECD STAN database*. Paris: OECD, 2005.

World Bank Group, WDI Online.

2 Background Reading

Becker, Gary S. “Human Capital and the Economy.” *Proceedings of the American Philosophical Society*, March 1992, 136(1), pp. 85-92.

Bernanke, Ben S., and Gurkaynak, Refet. “Is Growth Exogenous? Taking Mankiw, Romer and Weil Seriously.” In Ben S. Bernanke and Kenneth S. Rogoff eds., *NBER Macroeconomics Annual*, Cambridge, MA: MIT Press, 2001,

Caselli, Francesco. “Accounting for Cross-Country Income Differences.” In Philippe Aghion and Steven Durlauf eds., *Handbook of Economic Growth*, Elsevier Press, 2005, pp. 679-741.

Grabowski, Richard; Self, Sharmistha and Shields, Michael P. *Economic Development: A regional, institutional, and historical approach*. M. E. Sharpe Inc., 2007.

Hall, Robert E. and Jones, Charles I. “Why Do Some Countries Produce So Much More Output per Worker than Others?” *Quarterly Journal of Economics*, February 1999, 114(1), pp. 83-116.

Hulten, Charles R. and Isaksson, Anders. “Why Development Levels Differ: The Sources of Differential Economic Growth in a Panel of High and Low Income Countries.” *NBER Working Paper Series*, No: 13469, October 2007.

Kaldor, Nicholas. “Capital Accumulation and Economic Growth.” In F. P. Lutz and D. C. Hague, eds., *The theory of capital*. New York: St. Martin’s, 1961, pp. 177-222.

Kehoe, Timothy J. and Prescott, Edward C. “Great Depressions of the 20th Century.” *Review of Economic Dynamics*, January 2002, 5(1), pp.1-18.

Klenow, Peter J., and Rodríguez-Clare, Andrés. “Economic Growth: A Review Essay.” *Journal of Monetary Economics*, December 1997, 40(3), pp. 597-617.

Klenow, Peter J., and Rodríguez-Clare, Andrés. “The Neoclassical Revival in Growth Economics: Has It Gone Too Far?” In Ben S. Bernanke and Julio Rotemberg eds., *NBER Macroeconomics Annual*, Cambridge, MA: MIT Press, 1997, pp. 73-102.

3 Roots of Modern Economic Growth

The term “useful knowledge” was used by Simon Kuznets as the source of modern economic growth. The growth of technological and scientific knowledge in the past two centuries has been the overriding dynamic element in the economic and social history of the world. Its result is now often called the knowledge economy. Joel Mokyr argues that the growth explosion in the modern West in the past two centuries was driven not just by the appearance of new technological ideas but also by the improved access to these ideas in society at large--as made possible by social networks comprising universities, publishers, professional sciences, and kindred institutions.

Kuznets, Simon. “Modern Economic Growth: Findings and Reflections.” *American Economic Review*, June 1973, 63(3), pp. 247-58.

Maddison, Angus. *Phases of capitalist development*. Paris: OECD Development Center, 2001.

Mokyr, Joel. *The gifts of Athena: Historical origins of the knowledge economy*. Princeton University Press, 2002.

Mokyr, Joel. “Long-Term Economic Growth and the History of Technology.” In Philippe Aghion and Steven N. Durlauf eds., *Handbook of Economic Growth*, Elsevier Science: North Holland, 2005, Volume 1B, pp.1113-1180.

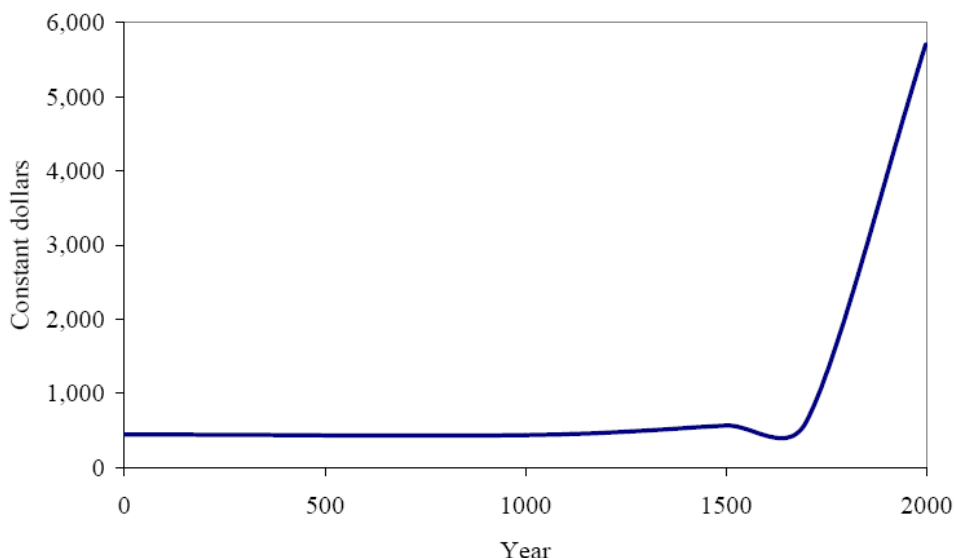
Parente, Stephen and Prescott, Edward C. *Barriers to riches*. Cambridge, MA: MIT Press, 2000.

II Transition from Stagnation to Growth

Until about 200 years ago, living standards were essentially stagnant in every country in the world. Starting with the industrial revolution in Britain, an increasing number of countries have undergone a transformation from a pre-industrial, stagnant, mostly agricultural economy to a modern society where sustained economic growth is the norm. The transition from stagnation to growth is not simply a matter of increased technical progress or faster capital accumulation, but a sweeping transformation of a diverse set of aspects of the economy and of society.

For example, all countries that have successfully developed have also experienced a demographic transition of rapidly falling mortality and fertility rates, a structural transformation from agriculture to industry and services, as well as political changes such as the abolishment of child labor, the introduction of public education, and the expansion of women's rights.

World GDP per Capita (Maddison, 2001)



Galor, Oded. “From Stagnation to Growth: Unified Growth Theory.” In Philippe Aghion and Steven N. Durlauf eds., *Handbook of Economic Growth*, Elsevier Science: North Holland, 2005, Volume 1A, pp.171-293.

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Lucas, Robert E., Jr. *Lectures on economic growth*. Cambridge, MA: Harvard University Press, 2002.

Parente, Stephen and Prescott, Edward C. “A Unified Theory of the Evolution of International Income Levels.” In Philippe Aghion and Steven N. Durlauf eds., *Handbook of Economic Growth*, Elsevier Science: North Holland, 2005, Volume 1B, pp.1371-1416.

1 Structural Transformation and Economic Development

The figure below provides a summary of some of the major changes in the structure of production that the US economy has undergone over the past 150 years. It shows that the share of US employment in agriculture stood at around 90 percent of the labor force at the beginning of the 19th century, while only a very small fraction of the US labor force worked in manufacturing and services. By the second half of the 19th century, both manufacturing and services had expanded to over 20 percent of employment, accompanied by a steep decline in the share of agriculture.

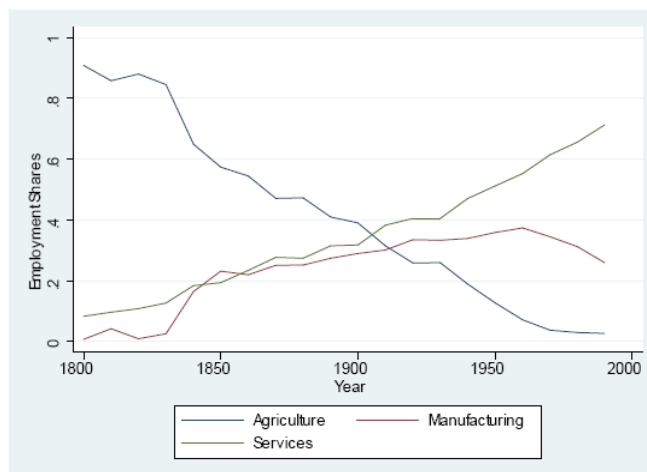


Figure: The share of US employment in agriculture, manufacturing and services, 1800-2000.

Acemoglu, Daron and Guerrieri, Veronica. “Capital Deepening and Non-Balanced Economic Growth.” *Journal of Political Economy*, June 2008, 116(3), pp. 467-498.

Buera, Francisco J. and Kaboski, Joseph P. “The Rise of the Service Economy.” Working Paper, Northwestern University and Ohio State University, August 2007

Buera, Francisco J. and Kaboski, Joseph P. “Scale and the Origins of Structural Change.” Working Paper, Northwestern University and Ohio State University, February 2008

Caselli, Francesco and Coleman, John Wilbur, II. “The U.S. Structural Transformation and Regional Convergence: A Reinterpretation.” *Journal of Political Economy*, June 2001, 109(3), pp. 584-616.

Echevarria, Cristina. “Changes in Sectoral Composition Associated with Economic Growth.” *International Economic Review*, May 1997, 38(2), pp. 431-52.

Gollin, Douglas; Parente, Stephen L. and Rogerson, Richard. “Farm Work, Home Work and International Productivity Differences.” *Review of Economic Dynamics*, October 2004, 7(4), pp. 827-50.

Gollin, Douglas; Parente, Stephen L. and Rogerson, Richard. “The Food Problem and the Evolution of International Income Levels.” *Journal of Monetary Economics*, May 2007, 54(4), pp. 1230-55.

Hsieh, Chang-Tai and Klenow, Peter J. “Misallocation and Manufacturing TFP in China and India.” Forthcoming, *Quarterly Journal of Economics*.

Kongsamut, Piyabha; Rebelo, Sergio and Xie, Danyang. “Beyond Balanced Growth.” *Review of Economic Studies*, October 2001, 68(4), pp. 869-882.

Matsuyama, Kiminori. “Agricultural Productivity, Comparative Advantage, and Economic Growth.” *Journal of Economic Theory*, December 1992, 58(2), pp. 317-34.

Matsuyama, Kiminori. “Structural Change.” In Lawrence Blume and Steven N. Durlauf eds., *The New Palgrave Dictionary of Economics*, May 2005, forthcoming.

Matsuyama, Kiminori. “Structural Change in an Interdependent World: A Global View of Manufacturing Decline.” *Journal of the European Economic Association*, 2009, 7(2-3), pp. 478-86.

Ngai, Rachel L. and Pissarides, Christopher A. “Structural Change in a Multisector Model of Growth.” *American Economic Review*, March, 2007, 97(1), pp. 429-43.

2 Demographic Transition

The standard explanation for economic stagnation in the pre-industrial era is the Malthusian income-population feedback. Before industrialization, living standards and population growth were positively related: when food and other resources were plentiful, people had more children, and more children survived to adulthood. This relationship led to a Malthusian trap where productivity improvements increased population density, which, in turn, depressed living standards due to the scarcity of land.

Given the central role of population growth in Malthus' theory, it is no surprise that the first models of the transition from stagnation to growth (such as Galor and Weil 2000 and Hansen and Prescott 2002) focused on the demographic dimension of the transition. In my work on the issue, I concentrate on the question why the speed and timing of fertility decline varies so substantially across countries. For example, after World War II a number of Asian countries such as South Korea needed only thirty years to undergo a demographic shift that in Britain took more than 100 year to complete.

Doepke (2004) develops a theory in which (following Hansen and Prescott 2002) the economic takeoff is modeled as an endogenous switch from a land-intensive agricultural technology to a modern industrial technology. Fertility decisions are endogenous, and are subject to a quantity-quality tradeoff. The model generates a transition from Malthusian stagnation to growth accompanied by a demographic transition from high to low fertility.

Barro, Robert J. and Becker, Gary S. “Fertility Choice in a Model of Economic Growth.” *Econometrica*, March 1989, 57(2), pp. 481-501.

Becker, Gary S.; Glaeser, Edward L. and Murphy, Kevin M. “Population and Economic Growth.” *American Economic Review*, May 1999, 89(2), pp. 145-149.

Becker, Gary S.; Murphy, Kevin M. and Tamura, Robert. “Human Capital, Fertility, and Economic Growth.” *Journal of Political Economy*, October 1990, 98(5), pp. 12-37.

Becker, Gary S. and Barro, Robert J. “A Reformulation of the Economic Theory of Fertility.” *Quarterly Journal of Economics*, February 1988, 103(1), pp. 1-25.

Doepke, Matthias. “Accounting for Fertility Decline during the Transition to Growth.” *Journal of Economic Growth*, September 2004, 9 (3), pp. 347-83.

Galor, Oded and Weil, David N. “Population, Technology, and Growth: From Malthusian Stagnation to the Demographic Transition and Beyond.” *American Economic Review*, September 2000, 90(4), pp. 806-828.

Hansen, Gary D. and Prescott, Edward C. “Malthus to Solow.” *American Economic Review*, September 2002, 92(4), pp. 1205-17.

Kremer, Michael. “Population Growth and Technological Change: One Million B.C. to 1990.” *Quarterly Journal of Economics*, August 1993, 108(3), pp. 681-716.

Tamura, Robert. “From Decay to Growth: A Demographic Transition to Economic Growth.” *Journal of Economic Dynamics and Control*, June-July 1996, 20(6-7), pp. 1237-61.

3 Institutions and Development

The world we live in was shaped by the rapid economic growth that took place in nineteenth-century Western Europe. The origins of this growth and the associated Industrial Revolution are generally considered to lie in the economic, political, and social development of Western Europe over the preceding centuries.

Acemoglu, Daron; Johnson, Simon and Robinson, James. “The Colonial Origins of Comparative Development: An Empirical Investigation.” *American Economic Review*, December 2001, 91(5), pp. 1369-1401.

Acemoglu, Daron; Johnson, Simon and Robinson, James. “The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth.” *American Economic Review*, June 2005, 95(3), pp. 546-579.

Acemoglu, Daron; Johnson, Simon and Robinson, James. “Institutions as a Fundamental Cause of Long-Run Growth.” In Philippe Aghion and Steven N. Durlauf eds., *Handbook of Economic Growth*, Elsevier Science: North Holland, 2005, Volume 1A, pp. 385-472.

Acemoglu, Daron and Robinson, James A. “Economic Backwardness in Political Perspective.” *American Political Science Review*, February 2006, 100(1), pp. 115-31.

Barro, Robert J. “Institutions and Growth, an Introductory Essay” *Journal of Economic Growth*, June 1996, 1 (2), pp. 145-148.

Glaeser, Edward L.; La Porta, Rafael; Lopez-de-Silanes, Florencio and Shleifer, Andrei. “Do Institutions Cause Growth?” *Journal of Economic Growth*, September 2004, 9 (3), pp. 271-303.

Nunn, Nathan. “The Importance of History for Economic Development.” *Annual Review of Economics*, 2009, 1, pp. 65-92.

4 General Purpose Technologies and Economic Growth

Traditionally, economists have considered the accumulation of conventional inputs such as labor and capital to be the primary force behind economic growth. Now, however, many macroeconomists place technological progress at the center of the growth process. This shift is due to new theoretical developments that allow researchers to link microeconomic aspects of the innovation process with macroeconomic outcomes. Most economists have viewed technological progress as an incremental process. A few have focused on the role of drastic innovations--those that introduce a discontinuity.

In this section we are concerned with the type of drastic innovation called general purpose technologies (GPTs). A GPT has the potential to affect the entire economic system and can lead to far-reaching changes in such social factors as working hours and constraints on family life. Examples of GPTs are the steam engine, electricity, and the computer. The study of GPTs is relatively new. A universal theoretical framework for dealing with GPTs does not yet exist.

Jovanovic, Boyan and Rousseau, Peter L. "General Purpose Technologies." In Philippe Aghion and Steven N. Durlauf eds., *Handbook of Economic Growth*, Elsevier Science: North Holland, 2005, Volume 1B, pp.1181-1226.

Helpman, Elhanan (Eds.). *General Purpose Technologies and Economic Growth*. Cambridge, MA: MIT Press, 1998.

III Openness and Growth

In these times of globalization and trade liberalization, a crucial issue is to know whether trade openness indeed promotes growth. There is a huge policy debate about what constitute "good" and "bad" policies for these countries that seem to have missed the train of economic development. Should they completely open up to international trade? As rhythmic as the tide, every politician rekindles the debate over trade policy. Is there a correlation between trade policy and economic performance? Do protectionist policies ensure growth or is it free trade that promotes rapid growth?

Lucas, Robert E., Jr. "Trade and the Diffusion of the Industrial Revolution." *American Economic Journal: Macroeconomics*, January 2009, 1(1), pp. 1-25.

McGrattan, Ellen R. and Prescott, Edward C. "Openness, Technology Capital, and Development." Forthcoming, *Journal of Economic Theory*.

Pack, Howard. "Industrialization and Trade." In Hollis B. Chenery and T.N. Srinivasan eds., *Handbook of Development Economics*. Amsterdam; New York and Oxford: Elsevier Science, North Holland, 1988, Volume 1, pp. 333-380.

Rebelo, Sergio. "Growth in Open Economies." *Carnegie-Rochester Conference Series on Public Policy*, July 1992, 36, pp. 5-46.

Ventura, Jaume. "Growth and Interdependence." *Quarterly Journal of Economics*, February 1997, 112(1), pp. 57-84.

Ventura, Jaume. “A Global View of Economic Growth.” In Philippe Aghion and Steven N. Durlauf eds., *Handbook of Economic Growth*, Elsevier Science: North Holland, 2005, Volume 1B, pp.1419-1497.

IV U.S. and European Employment and Productivity Growth

One of the most remarkable facts about Europeans is that they work much less than Americans. Europeans worked more than Americans in the 1950s and 1960s, when they were lowering their heads in the war reconstruction efforts, first, and then during a period of boom. But then Europeans began to work fewer and fewer hours per capita. While in the early 1970s hours worked per person were about the same in Europe and in the United States, today the French, German, and Italians work about 1400 hours per person per year versus about 1800 hours per person in the United States. These differences are almost an order-of-magnitude larger than those associated with business cycle fluctuations in the U.S. economy. The existence of such large differences provides an excellent opportunity for us to learn about what factors have the most effect on hours of work. Moreover, understanding the factors that account for these large differences in economic outcomes is likely to have important policy implications.

Krueger, Dirk and Kumar, Krishna B. “US-Europe Differences in Technology-Driven Growth: Quantifying the Role of Education.” *Journal of Monetary Economics*, January 2004, 51(1), pp. 161-190.

Ljungqvist, Lars and Sargent, Thomas “Understanding European Unemployment with Matching and Search-Island Models.” *Journal of Monetary Economics*, November 2007, 54(8), pp. 2139-79.

Ljungqvist, Lars and Sargent, Thomas “Understanding European Unemployment with a Representative Family Model.” *Journal of Monetary Economics*, November 2007, 54(8), pp. 2180-2204.

Ohanian, Lee; Raffo, Andrea and Rogerson, Richard. “Long-Term Changes in Labor Supply and Taxes: Evidence from OECD Countries, 1956-2004.” *The Federal Reserve Bank of Kansas City Research Working Paper Series*, 06-16, December 2006.

Ohanian, Lee; Raffo, Andrea and Rogerson, Richard. “Work and Taxes: Allocation of Time in OECD Countries.” *The Federal Reserve Bank of Kansas City Economic Review Articles*, Third Quarter 2007.

Rogerson, Richard. “Structural Transformation and the Deterioration of European Labor Market Outcomes.” *Journal of Political Economy*, April 2008, 116(2), pp. 235-59.

Rogerson, Richard. “Two Views on the Deterioration of European Labor Market Outcomes.” *Journal of the European Economic Association*, April-May 2004, 2(2-3), pp. 447-55.

Shimer, Robert. “Convergence in Macroeconomics: The Labor Wedge.” *American Economic Journal: Macroeconomics*, January 2009, 1(1), pp. 280-97.

Numerical Methods

GOALS

This course is an introduction to numerical methods for computing equilibria in both linear and nonlinear dynamic economies. The primary goal of the course is to equip students with the numerical tools necessary to tackle interesting questions in macroeconomics. The course has two main focuses. The first is the study of numerical methods and algorithms pertinent to solving and analyzing macro models. The second is the study of examples of their application by macroeconomists. While this is not a computer programming course, the course work will be computational in nature. Students should be familiar with some programming language and all the course work can be completed with Matlab.

One pervasive aspect of economic modeling is its essential nonlinearity, sometimes made even less amenable by the presence of uncertainty. In the absence of closed form solution, most economic problems have to be solved using numerical schemes. In other words, many interesting economic models cannot be solved analytically using the standard mathematical techniques of algebra and calculus. Models that cannot be solved in this way are often applied economic models that attempt to capture the complexities inherent in real-world economic behavior.

Computational techniques are not just about quantifying the qualitative results of theoretical models. In many problems we have no alternative but to rely on the computer for any solution. For such problems existing economic theory only provides the building blocks and one must generate the corresponding virtual economies to understand the complete implications of the theory. In these cases numerical solutions may not lead to the mere calibration of analytical results but instead actually suggest analytical theorems to researchers.

In the first part we will learn the basic numerical methods, including linear and nonlinear equation methods, complementarity methods, numerical integration and differentiation, and function approximation. In these chapters we will develop appreciation for basic numerical techniques by illustrating their application to equilibrium and optimization models familiar to most economists.

In recent years, a number of numerical methods have been proposed in the economic literature. The second part of the course is devoted to these methods for solving dynamic general equilibrium models. The methods will be applied to current problems in macroeconomics, public finance, finance, labor economics, and development. More specifically, applications will include models of business cycles, growth models, heterogeneous-agent models, asset-pricing models, and overlapping generations models with finite but long-lived agents such as those used in public finance.

EVALUATION

Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Problem Sets	60%
Final Exam	40%

Steps in an Economic Computational Experiment (Kydland-Prescott)

Step 1: Pose a Question

Computational experiments are designed for questions of a quantitative nature. Thus the first step in conducting such an experiment is to have a well-designed quantitative question.

- What is/are the quantitative question(s) that the study seeks to answer?

Step 2: Use Well-Tested Theory

The next step is to choose a theory to guide in the development of a model. The theory can be thought of as “an explicit set of instructions for building...a mechanical imitation system.”

- What theory does the study use to develop its computational experiment?
- Is the theory well-tested?
- Is this theory well-suited to address the question(s) at hand?

Step 3: Construct a Model Economy

Keeping the question in mind, the next step is to use the economic theory to guide in the construction of a model economy. There are two issues to focus on when writing down the model economy. First one has to determine how much detail to include. The second major issue to consider is the feasibility of conducting the computational experiment given the particular setup.

- What are the key features of the model economy?
- Why is each feature present?
- Does the inclusion of the feature help the researcher in addressing his question and, if yes, how?
- Are there any important or potentially important features that the researcher abstracts from?
- Why are these features not included? If they were included would the model still be computationally tractable?
- Is the model well-suited for addressing the question(s) at hand?

Step 4: Calibrate the Model Economy

Calibrating means choosing a set of parameter values so that the model is consistent with the real world along a limited, but clearly specified, number of dimensions.

- What is the researcher’s calibration strategy? Along what dimensions do they make the model consistent with the real world?
- How do they obtain real world measurements? Do they use the right measurements?

Step 5: Run the Experiment

The final step in conducting computational experiments consists in using the instrument (a computer program that generates equilibrium realizations of our calibrated model economy) that we have created to answer the quantitative question(s) posed

- What algorithm is used to compute the model? Why was it chosen?
- How do the researchers use the calibrated model economy to answer their question?
- What are the results?

USEFUL TEXTBOOKS

Acemoglu, Daron. *Introduction to modern economic growth.* Cambridge, Princeton University Press, 2009.

Heer, Burkhard and Maussner, Alfred. *Dynamic general equilibrium modeling: computational methods and applications.* Berlin; New York, NY: Springer, 2005.

Judd, Kenneth L. *Numerical methods in economics.* Cambridge, MA: MIT Press, 1998.

Ljungqvist, Lars and Sargent, Thomas J. *Recursive Macroeconomic Theory.* Cambridge, MA: MIT Press, 2004.

Stokey, Nancy L.; Lucas, Robert E., Jr. and Prescott, Edward C. *Recursive Methods in Economic Dynamics.* Cambridge, MA: Harvard University Press, 1989.

Some additional books that will prove useful are:

Adda, Jérôme and Cooper, Russell. *Dynamic economics: Quantitative methods and applications.* Cambridge, Massachusetts: The MIT Press, 2003

Cooley, Thomas F. (Eds.). “*Frontiers of Business Cycle Research.*” Princeton University Press, 1995.

Marimon, Ramon and Scott, Andrew (Eds.). “*Computational Methods for the Study of Dynamic Economies.*” Oxford: Oxford University Press, 1999.

Miranda, Mario J. and Fackler, Paul L. *Applied computational economics and finance.* Cambridge, Massachusetts: The MIT Press, 2002.

Press, William H.; Teukolsky, Saul A.; Vetterling, William T. and Flannery, Brian P. (Eds.) *Numerical Recipes in C.* New York, N.Y.: Press Syndicate of the University of Cambridge, 1992.

Ralston, Anthony and Rabinowitz, Philip. *A first course in numerical analysis.* Mineola, New York: Dover Publications, Inc. 1978 (2nd edition).

COURSE OUTLINE

I Numerical Analysis

Heer and Maussner, Chapter 8

Judd, Chapter 5

Nonlinear Equations

Bisection

Broyden's Method

Fixed-Point Iteration

Gauss-Jacobi Algorithm

Gauss-Seidel Algorithm

Newton's Method

Secant Method

Numerical Integration and Differentiation

Judd, Chapter 7

Newton-Cotes Formulas

Gaussian Formulas

Singular Integrals

Adaptive Quadrature

Numerical Differentiation

II Solving the Stochastic Growth Model

Markov Chains

Heer and Maussner, Chapter 9

Ljungqvist and Sargent, Chapter 2

Stokey and Lucas, Chapter 8

Flodén, Martin. "A Note on the Accuracy of Markov-Chain Approximations to Highly Persistent AR (1) Processes." *Economics Letters*, June 2008, 99(3), pp. 516-520.

[Matlab code](#)

Tauchen, George. "Finite State Markov-Chain Approximations to Univariate and Vector Autoregressions." *Economics Letters*, 1986, 20(2), pp. 177-181.

Tauchen, George and Hussey, Robert. "Quadrature-Based Methods for Obtaining Approximate Solutions to Nonlinear Asset Pricing Models." *Econometrica*, March 1991, 59(2), pp. 371-396.

Value-Function Iteration

Ljungqvist and Sargent, Chapter 3, 4

Christiano, Lawrence J. “Solving the Stochastic Growth Model by Linear-Quadratic Approximation and by Value-Function Iteration.” *Journal of Business & Economic Statistics*, January 1990, 8(1), pp. 23-26.

Coleman, John Wilbur. “Solving the Stochastic Growth Model by Policy-Function Iteration.” *Journal of Business & Economic Statistics*, January 1990, 8(1), pp. 27-29.

Tauchen, George. “Solving the Stochastic Growth Model by Using Quadrature Methods and Value-Function Iterations.” *Journal of Business & Economic Statistics*, January 1990, 8(1), pp. 49-51.

Projection Methods

Heer and Maussner, Chapter 4

Judd, Chapter 11

Judd, Kenneth L. “Projection Methods for Solving Aggregate Growth Models.” *Journal of Economic Theory*, December 1992, 58(2), pp. 410-452.

Parameterized Expectations

Den Haan, Wouter J. and Marcet, Albert. “Solving the Stochastic Growth Model by Parameterizing Expectations.” *Journal of Business & Economic Statistics*, January 1990, 8(1), pp. 31-34.

Marcet, Albert and Lorenzoni, Guido. “The Parameterized Expectations Approach: Some Practical Issues.” In Ramon Marimon and Andrew Scott eds., *Computational Methods for the Study of Dynamic Economies*, Oxford University Press, 1999, pp. 143-171.

Comparing Solution Methods

Aruoba, S. Borağan; Fernández-Villaverde, Jesús and Rubio-Ramírez, Juan F. “Comparing Solution Methods for Dynamic Equilibrium Economies.” *Journal of Economic Dynamics and Control*, December 2006, 30(12), pp. 2477-2508.

Taylor, John B. and Uhlig, Harald. “Solving Nonlinear Stochastic Growth Models: A Comparison of Alternative Solution Methods.” *Journal of Business & Economic Statistics*, January 1990, 8(1), pp. 1-17.

III Heterogeneous Agent Models

There are many questions in economics for which heterogeneous-agent dynamic models have to be used to provide answers. Examples of these questions where the desired answer is quantitative are as follows:

- What changes in the distribution of wealth will occur if the tax system is changed from progressive to proportional?
- What increases in taxation are needed to maintain the current level of US social security benefits under current population patterns?
- What type of policy changes can be expected from changes in constitutions?

All these questions require models where the households that populate are not identical. With respect to the first question, note that the key property of progressivity of the tax system is that different households face different tax rates. For the second question, the age distribution of the population determines the amounts collected and paid by the administrators of social security. Finally, the determinants of policy should be affected by the relations between different groups of households that do not have the same preferences over policies.

Computation of equilibria in these models is usually substantially more difficult than in standard representative agent models, as equilibrium laws of motion become functions not only of aggregate variables, but also of the distribution of these variables across different types of agents. Solving for the laws of motion of such distributions is a nontrivial task.

Computation of Stationary Distributions

Heer and Maussner, Chapter 5

Aiyagari, S. Rao. “Uninsured Idiosyncratic Risk and Aggregate Saving.” *Quarterly Journal of Economics*, August 1994, 109(3), pp. 659-84.

Huggett, Mark. “The Risk-Free Rate in Heterogeneous-Agent Incomplete-Insurance Economies.” *Journal of Economic Dynamics and Control*, September-November 1993, 17(5-6), pp. 953-69.

Dynamics of the Distribution Function

Heer and Maussner, Chapter 6

Krusell, Per and Smith, Anthony A., Jr. “Income and Wealth Heterogeneity in the Macroeconomy.” *Journal of Political Economy*, October 1998, 106(5), pp. 867-96.

Ríos-Rull, José-Víctor. “Computation of Equilibria in Heterogeneous-Agent Models.” In Ramon Marimon and Andrew Scott eds., *Computational Methods for the Study of Dynamic Economies*, Oxford University Press, 1999, pp. 238-264.

IV Computational Experiments in Macroeconomics

Methodology

The researcher constructs the model economy. A quantitative answer is found for the proposed question to the model economy. The results are compared to the real world data. When the results aren't accurate, measurements must be redone and further testing follows. The theories used in the setup of the model may not match the proposed question. The model then needs to be reconstructed. The instructions of the theory used to build the model are tested to see if they are realistic to the actual data. The predictions of the model for future results are tested to the actual data. If the predictions match, further testing is done by including realistic scenarios for the data that have not been observed before. These new conditions can induce further development of the theory.

Hansen, Lars Peter and Heckman, James C. "The Empirical Foundations of Calibration." *Journal of Economic Perspectives*, Winter 1996, 10(1), pp. 87-104.

Kydland, Finn E. and Prescott, Edward C. "The Econometrics of the General Equilibrium Approach to Business Cycles." *Scandinavian Journal of Economics*, June 1991, 93(2), pp. 161-178.

Kydland, Finn E. and Prescott, Edward C. "The Computational Experiment: An Econometric Tool." *Journal of Economic Perspectives*, Winter 1996, 10(1), pp. 69-85.

Sims, Christopher A. "Macroeconomics and Methodology." *Journal of Economic Perspectives*, Winter 1996, 10(1), pp. 105-120.

Calibration

Calibration is a strategy for finding numerical values for the parameters of artificial economic worlds. Some of the parameter values are chosen based on observed features of actual economies. The others are determined based on the theory.

"Economic Growth and Business Cycles", **Cooley and Prescott**

Gomme, Paul and Rupert, Peter. "Theory, Measurement and Calibration of Macroeconomic Models." *Journal of Monetary Economics*, March 2007, 54(2), pp. 460-497.

Prescott, Edward C. "Theory Ahead of Business-Cycle Measurement." *Carnegie-Rochester Conference Series on Public Policy*, Autumn 1986, 25, pp. 11-44.

Selected Topics in International Economics

GOALS

One of the most significant developments in macroeconomic during recent years has been the increasingly central role played by international transactions in both goods and assets. The primary goal of this course is to motivate and initiate innovative research in the field of international economics. You will find that we focus heavily on issues, models, and quantitative work at the heart of international economics. I am planning to cover some selected topics those constitute very important research agenda for many economists around the world.

First, we will study *firms in international trade*. For most of its lengthy history the field of international trade largely ignored the role of the firm in mediating the flow of goods and services. A new theoretical and empirical literature has emerged that examines international trade at the level of individual producers.

Second, we will study *financial globalization, capital flows, trade and FDI, and global imbalances*. Should policymakers be worried that the U.S. current account deficit is on track to set an all-time record in 2004, reaching a level near 6 percent of GDP? With the United States today absorbing roughly 70 percent of the current account surpluses of China, Japan, Germany, and of the entire world's other surplus countries, the increasingly popular view that the current situation is sustainable seems unlikely. This is all the more true when one considers that government deficits rather than high investment now account for the lion's share of the U.S. current account deficit.

Third, we will study *outsourcing*. According to Grossman and Helpman (2005) *we live in an age of outsourcing*. Outsourcing can happen both through transactions by firms, like phone call centers staffed in Bangalore to serve customers in New York and X-rays transmitted digitally from Boston to be read in Bombay, or with direct consumption purchases by individuals, like when someone hires an offshore firm to provide plans for redesigning or redecorating a living room.

EVALUATION

Lectures are complemented by student presentations in class of research papers in the literature, and by the completion and presentation of an original research project.

Class Presentations

You will have 45 minutes for the presentation. All students are required to read the paper that is being presented as I can randomly ask students questions related to the presentation. Each presentation should direct the questions such as

What question is this paper trying to answer?

What sorts of tools does the author use to answer the question?

What is the answer that the author comes up with and does it make sense to you?

You should derive the key equations and analytical expressions of the paper. Moreover, you should clearly explain the computational experiments and sketch the details of the numerical

algorithm. Each person's talk will be graded on its technical content, organization, clarity, thoroughness, and effectiveness. How well you handle questions from the other students will also be taken into account.

Tips on Preparing for the Presentations

Communication of results is an essential component of economic research. Many economists prefer attending conferences, workshops, and seminars to reading working papers and journal articles as a way of picking up ideas. The fundamental ingredient in a good presentation is preparation. Try to practice the presentation more than once. When you are preparing slides, make sure that the font is large enough to be readable. Since time is precious to you in your presentation, you should think carefully about how you want spend it.

Long introductions are almost always a bad idea. What the audience usually wants to learn during the introduction is the question that you intend to answer, why the question and the answer are important, and, probably, what your answer is going to be. In general, audiences do not like research presentations to be mysterious. Surprise endings are fine for novels and films, but usually not for economic research. You will learn a lot in preparing for your presentation. You can also learn a lot at the class from the other presentations.

The final draft of the written research project is due on the scheduled final examination date. The research paper cannot be the same as that submitted to another class, in this or any other semester.

Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Class Presentations and Participation	50%
Written Research Project	50%

COURSE OUTLINE

What follows is a list of papers for this course. This list is much too long by design. The intention is to give you some sort of an organization of the literature along with a guide, by topic, of some of the recent work in the area in case you are interested in pursuing a particular topic in more detail. This list is not complete.

I Firms in International Trade

Traditional trade theory explained the flow of goods between countries in terms of comparative advantage, that is, variation in the opportunity costs of production across countries and industries. Even the research focusing on differentiated varieties and increasing returns to scale that followed Helpman and Krugman continued to retain the characterization of the representative firm. However, the assumption of a representative firm, while greatly enhancing the tractability of general equilibrium analysis, is emphatically rejected in the data.

Recent research over the past decade has been an attempt to explore international trade from below: to understand the decisions of heterogeneous firms in shaping international trade and their effects on productivity growth and welfare. In spite of a decade of research, we are just beginning to explore the role of firms in mediating the effects of trade on the economy. The new detailed data on firms, products, and trade will allow us to ask important questions about firms engaged in international trade and investment.

This section is designed to introduce you to the new firm-level theories of trade and analyze their quantitative implications. What are the important features that firm-level models of trade can offer not attainable by previous theory? How can we construct a reasonable mapping of firm-level models of trade to the data? Can the firm-level models of trade be integrated in a unified macroeconomic framework, without losing the desirable properties that each model individually attains?

Alvarez, Fernando and Lucas, Robert E. “General Equilibrium Analysis of the Eaton-Kortum Model of International Trade.” *Journal of Monetary Economics*, September 2007, 54(6), pp. 1726-1768.

Arkolakis, Costas. “Market Penetration Costs and the New Consumers Margin in International Trade.” *NBER Working Paper Series*, No: 14214, August 2008.

Arkolakis, Costas. “A Unified Theory of Firm Selection and Growth.” Working Paper, Yale University, May 2009.

Baldwin, Richard E. and Robert-Nicoud, Frédéric. “Trade and Growth with Heterogeneous Firms.” *Journal of International Economics*, January 2008, 74(1), pp. 21-34.

Bernard, Andrew B.; Eaton, Jonathan; Jensen, J. Bradford and Kortum, Samuel. “Plants and Productivity in International Trade.” *American Economic Review*, November 2003, 93(4), pp. 1268-1290.

Chaney, Thomas. “Distorted Gravity: The Intensive and Extensive Margins of International Trade.” *American Economic Review*, September 2008, 98(4), pp. 1707-1721.

Eaton, Jonathan and Kortum, Samuel. “Technology, Geography, and Trade.” *Econometrica*, September 2002, 70(5), pp. 1741-1779.

Eaton, Jonathan; Kortum, Samuel and Kramarz, Francis. “Dissecting Trade: Firms, Industries, and Export Destinations.” *American Economic Review*, May 2004, 94(2), pp. 150-154.

Ederington, Josh and McCalman, Phillip. “Endogenous Firm Heterogeneity and the Dynamics of Trade Liberalization.” *Journal of International Economics*, March 2008, 74(2), pp. 422-440.

Helpman, Elhanan; Melitz, Marc J. and Rubinstein, Yona. “Estimating Trade Flows: Trading Partners and Trading Volumes.” *Quarterly Journal of Economics*, May 2008, 123(2), pp. 441-487.

Melitz, Marc J. “The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity.” *Econometrica*, November 2003, 71(6), pp. 1695-1725.

Ruhl, Kim J. “The International Elasticity Puzzle.” Working Paper, University of Texas at Austin, March 2008.

Useful Links

Eaton and Kortum Book: http://www.econ.umn.edu/~kortum/courses/spring06/s06_texas.htm

Tim Kehoe’s class notes: <http://www.econ.umn.edu/~tkehoe/classes/8401-07.html>

Thomas Chaney’s class notes: <http://home.uchicago.edu/~tchaney/teaching.html>

Pol Antràs’ notes: http://www.courses.fas.harvard.edu/~ec2535/Lectures_Notes/

II Financial Globalization, Capital Flows, Current Account, FDI, and Global Imbalances

The last two decades have been characterized by a sharp increase in international capital flows and, in particular, by a rising globalization of equity markets. A central economic challenge of the first decade of the third millennium is “global rebalancing” – the re-alignment of current account balances between the three key economic regions of the US, the Euro area, and East Asia. There is a large theoretical literature that explains how current account balances (the trade balance plus net income from assets abroad) should evolve in idealized economies. However, that literature has been largely unsuccessful in empirically explaining real-world experiences. The broadening of the set of assets internationally traded, the switch to a floating exchange rate regime in 1973, and the larger size of gross asset and liability positions have made it increasingly necessary to incorporate valuation adjustments when computing net foreign asset positions.

Many analysts in academia, the private sector, and applied research institutions express increasing concern about the growing U.S. current account deficit. There is a general sense that current global imbalances are unsustainable and that adjustment must come sooner rather than later. The unprecedented magnitude of the U.S. current account deficit and the United States’ growing net foreign indebtedness have fueled these worries, with many analysts arguing that, unless something is done, the world will move toward a major financial crisis.

[Web Page on the Current Accounts of Advanced Countries](#)

Antràs, Pol and Caballero, Ricardo J. “Trade and Capital Flows: A Financial Frictions Perspective.” *Journal of Political Economy*, August 2009, 117(4), pp. 701-744.

Backus, David; Henriksen, Espen; Lambert, Frederic and Telmer, Chris. “Current Account Fact and Fiction.” Mimeo.

Blanchard, Olivier and Giavazzi, Francesco. “Current Account Deficits in the Euro Area: The End of the Feldstein-Horioka Puzzle?” *Brookings Papers on Economic Activity*, 2002, 2, pp. 147-86.

Caballero, Ricardo J.; Farhi, Emmanuel and Gourinchas, Pierre-Olivier. “An Equilibrium Model of “Global Imbalances” and Low Interest Rates.” *American Economic Review*, March 2008, 98(1), pp. 358-393.

Engel, Charles and Rogers, John H. “The U.S. Current Account Deficit and the Expected Share of World Output.” *Journal of Monetary Economics*, July 2006, 53(5), pp. 1063-1093.

Gourinchas, Pierre-Olivier and Jeanne, Olivier. “Capital Flows to Developing Countries: The Allocation Puzzle.” Working Paper, University of California Berkeley and John Hopkins University, June 2009.

Henriksen, Espen. “A Demographic Explanation of U.S. and Japanese Current Account Behavior .” Mimeo.

McGrattan, Ellen R. and Prescott, Edward C. “Openness, Technology Capital, and Development.” Forthcoming, *Journal of Economic Theory*.

Mendoza, Enrique, G.; Quadrini, Vincenzo and Rios-Rull, Jose Victor. “On The Welfare Implications of Financial Globalization without Financial Development.” *NBER Working Paper Series*, No: 13412, September 2007.

Mendoza, Enrique, G.; Quadrini, Vincenzo and Rios-Rull, Jose Victor. “Financial Integration, Financial Development and Global Imbalances.” *Journal of Political Economy*, June 2009, 117(3), pp. 371-416.

III Outsourcing

It is increasingly common today that when U.S. consumers seek out help with their American-made product, the person handling the call or Internet chat session is sitting at a desk on the other side of the world. This is just one example of the growing tendency in the U.S. manufacturing sector to "outsource" key services -- which can include, among other things, technical support, medical claims processing, and software development -- to providers in other countries. The rapid expansion over the past five years of U.S. imports of information technology (IT) and IT-enabled services has been a clear boon to the economies of India, China, Singapore and a number of other developing countries.

Antràs, Pol and Helpman, Elhanan. "Global Sourcing." *Journal of Political Economy*, June 2004, 112(3), pp. 552-580.

Feenstra, Robert C. and Hanson, Gordon H. "The Impact of Outsourcing and High Technology Capital on Wages: Estimates for the United States, 1979-1990." *Quarterly Journal of Economics*, August 1999, 114(3), pp. 907-940.

Feenstra, Robert C. and Hanson, Gordon H. "Globalization, Outsourcing and Wage Inequality." *American Economic Review*, May 1996, 86(2), pp. 240-245.

Grossman, Gene M. and Helpman, Elhanan. "Outsourcing in a Global Economy." *Review of Economic Studies*, January 2005, 72(1), pp. 135-159.

Grossman, Gene M. and Helpman, Elhanan. "Integration versus Outsourcing in Industry Equilibrium." *Quarterly Journal of Economics*, February 2002, 117(1), pp. 85-120.

Grossman, Gene M.; Helpman, Elhanan and Szeidl, Adam. "Complementarities between Outsourcing and Foreign Sourcing." *American Economic Review*, May 2005, 95(2), pp. 19-24.

Grossman, Gene M. and Rossi-Hansberg, Esteban "Trading Tasks: A Simple Theory of Offshoring." *American Economic Review*, December 2008, 98(5), pp. 1978-97.

Hsieh, Chang-Tai and Woo, Keong T. "The Impact of Outsourcing to China on Hong Kong's Labor Market." *American Economic Review*, December 2005, 95(5), pp. 1673-87.

Trefler, Daniel. "Service Offshoring: Threats and Opportunities." *Brookings Trade Forum*, 2005, pp. 35-60.

Undergraduate-level courses

Advanced Macroeconomics

GOALS

Macroeconomics is the study of the economy as a whole. It is therefore concerned with some of the most important questions in economics.

- Why are some countries rich and others poor?
- Why do countries grow?
- What are the sources of recessions and booms?
- What are the determinants of consumption and investment?
- Why is there unemployment?
- What are the sources of inflation?

Answers to such questions are the subject of this course.

EVALUATION

Given the course's format, I expect you to read in advance the material for every session. Active participation is encouraged. There will be 3 homework assignments. They will be posted on the course's website. All problem sets should be typed, yet graphs and algebra can be hand-written as long as they are clear and legible. Late assignments will not be accepted under any circumstance.

There will be one midterm exam and one final exam. Final exam will be cumulative. Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Problem Sets	20%
Midterm Exam	30%
Final Exam	50%

TEXTBOOK

The main text for the course is

Romer, David. *Advanced Macroeconomics*. McGraw Hill, 2006 (3rd edition).

Supplementary readings include lecture notes, which I will distribute as we proceed, as well as journal articles and selections from other books.

COURSE OUTLINE

I Modern Macroeconomics

Blanchard, Olivier. “What Do We Know about Macroeconomics that Fisher and Wicksell Did Not?” *Quarterly Journal of Economics*, November 2000, 115(4), pp. 1375-1409.

Blanchard, Olivier. “The State of Macro.” *Annual Review of Economics*, 2009, 1, pp. 209-228.

Kydland, Finn E. “Quantitative Aggregate Economics.” *American Economic Review*, December 2006, 96(5), pp. 1373-83.

Phelps, Edmund S. “Macroeconomics for a Modern Economy.” *American Economic Review*, June 2007, 97(3), pp. 543-61.

Woodford, Michael. “Revolution and Evolution in Twentieth-Century Macroeconomics.” Unpublished Manuscript, 1999.

II Growth

The Solow Growth Model, Romer Ch. 1

Research and Development Models, Romer Ch. 3, Part A

Cross-Country Income Differences, Romer Ch. 3, Part B

Kenny, Charles and Williams, David. “What Do We Know About Economic Growth? Or, Why Don’t We Know Very Much?” *World Development*, January 2001, 29(1), pp. 1-22.

Romer, Paul M. “The Origins of Endogenous Growth.” *Journal of Economic Perspectives*, Winter 1994, 8(1), pp. 3-22.

Solow, Robert M. “Perspectives on Growth Theory.” *Journal of Economic Perspectives*, Winter 1994, 8(1), pp. 45-54.

“The Solow–Swan Model”, **Barro and Sala-i Martin**, Chapter 1

III Real Business Cycles

Real-Business Cycle Theory, Romer Ch. 4

“Real Business Cycles”, **Ellen R. McGrattan**

(The note has been prepared for The New Palgrave Dictionary of Economics, 2nd edition)

Rebello, Sergio. “Real Business Cycle Models: Past, Present and Future.” *Scandinavian Journal of Economics*, June 2005, 107(2), pp. 217-238.

IV Microeconomic Foundations

The Lucas Imperfect-Information Model, Romer Ch. 6, Part A

New Keynesian Economics, Romer Ch. 6, Part B

V Consumption and Investment

Consumption, Romer Ch. 7

Investment, Romer Ch. 8

Hall, Robert E. “Stochastic Implications of the Life-Cycle Permanent Income Hypothesis: Theory and Evidence.” *Journal of Political Economy*, December 1978, 86(6), pp. 971-987.

VI Unemployment and Inflation

Unemployment, Romer Ch. 9 (9.1, 9.2, 9.3)

Inflation and Monetary Policy, Romer Ch. 10 (10.1, 10.2, 10.3)

Gilles, Saint-Paul. “Why Are European Countries Diverging in Their Unemployment Experience?” *Journal of Economic Perspectives*, Autumn 2004, 18(4), pp. 49-68.

Orphanides, Athanasios. “Monetary-Policy Rules and the Great Inflation.” *American Economic Review*, May 2002, 92(2), pp. 115-120.

Good Luck!

Intermediate Macroeconomics

GOALS

Macroeconomics is the study of the behavior of large collections of economic agents. It focuses on the aggregate behavior of consumers and firms, the behavior of governments, the overall economic activity in individual countries, the economic interactions among nations, etc.

Macroeconomists are motivated by large questions and by issues that affect many people and many nations of the world. Why are some countries exceedingly rich while others are exceedingly poor? Why are there fluctuations in aggregate economic activity?

The purpose of this course is to provide a modern treatment of undergraduate macroeconomics. Modern macroeconomics analyzes issues associated with long-run growth and business cycles, using models that are built up from microeconomic principles. The primary questions of interest to macroeconomists involve the causes of long-run growth and business cycles and the appropriate role for government policy in influencing the performance of the economy. Building models from microeconomic principles is important, because this will more often give us the correct answers to questions regarding the effects of changes in economic policy.

The course will entail an introduction of the issues confronted by macroeconomists and the measurement of the Macroeconomy; understanding the mechanisms for long-term economic growth; investigating the behavior of consumers and firms using a static model; introducing dynamics by studying the workhorse two-period intertemporal model. Last, but not least, an added goal of the course is to test important theoretical results on real-world data and examples.

EVALUATION

Given the course's format, I expect you to read in advance the material for every session. Active participation is encouraged; my assessment of class participation will include the comments on real-world issues which are parallel to the course's material, and relevant contributions to class discussion.

There will be 6 homework assignments. They will be posted on the course's website. All problem sets should be typed, yet graphs and algebra can be hand-written as long as they are clear and legible. Your lowest homework grade will be dropped. Late assignments will not be accepted under any circumstance.

There will be two midterm exams and one final exam. All exams will be cumulative. Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Participation	10%
Problem Sets	10%
Midterm Exam I	25%
Midterm Exam II	25%
Final Exam	30%

TEXTBOOK

Williamson, Stephen D. *Macroeconomics*. Addison-Wesley, 2008 (3rd edition).

Williamson (hereafter W2008) is the required text for this course. Alternative sources such as electronic notes and other useful texts will be posted electronically on the course's website. Moreover, we will study scientific papers published in top economic journals to improve our understanding of the materials.

Lectures and text readings are complements, not substitutes, and students are responsible for material presented in both lectures and readings. Regular class attendance is strongly advised.

COURSE OUTLINE

The material that will be covered is summarized below. For sure I will cover parts I through V; the material in Part VI is optional and will be covered as a function of the remaining time and your interest in the topics.

I Introduction and Measurement

Introduction, W2008 Ch. 1

Phelps, Edmund S. "Macroeconomics for a Modern Economy." *American Economic Review*, June 2007, 97(3), pp. 543-61.

II Measurement

Measurement, W2008 Ch. 2

Business Cycle Measurement, W2008 Ch. 3

Romer, Christina D. "Changes in Business Cycles: Evidence and Explanations." *Journal of Economic Perspectives*, Spring 1999, 13(2), pp. 23-44.

III A One-Period Model

Consumer and Firm Behavior: The Work-Leisure Decision, W2008 Ch. 4

A Closed-Economy One-Period Macroeconomic Model, W2008 Ch. 5

Prescott, Edward C. "Why Do Americans Work So Much More than Europeans?" *Federal Reserve Bank of Minneapolis*, July 2004, 28(1), pp. 2-13.

IV Economic Growth

Economic Growth: Malthus to Solow, W2008 Ch. 6

Income Disparity among Countries and Endogenous Growth, W2008 Ch. 7

Romer, Paul M. “Why, Indeed, in America? Theory, History, and the Origins of Modern Economic Growth.” *American Economic Review*, May 1996, 86(2), pp. 202-206.

V A Two-Period Model

A Two-Period Model: The Consumption-Savings Decision, W2008 Ch. 8

A Real Intertemporal Model with Investment, W2008 Ch. 9

Kydland, Finn E. “Quantitative Aggregate Economics.” *American Economic Review*, December 2006, 96(5), pp. 1373-83.

VI Miscellaneous Reading

If time permits, some of the following topics will be covered:

A Monetary Intertemporal Model, W2008 Ch. 10

Market-Clearing Models of the Business Cycle, W2008 Ch. 11

Keynesian Business Cycle Theory, W2008 Ch. 12

Good Luck!

Advancing Development: Core Themes in Global Economics

GOALS

Why isn't the whole world as rich as the United States? We will study one of the most important subjects of all economic issues: the economic transformation of those countries known as the developing world. The World Development Report (World Bank, 1996) employs a threshold of \$9,000 per capita to distinguish between what it calls high-income countries and low- and middle-income countries: according to this classification, well over 4.5 billion of the 5.6 billion people in the world today live in the developing world of low- and middle-income countries. They earn, on average, around \$1,000 per capita, a figure that is worth contrasting with the yearly earnings of the average North American or Japanese resident, which are well above \$25,000.

Despite the many caveats and qualifications that we later add to these numbers, the ubiquitous fact of these astonishing disparities remains. Development economics studies the economies of such countries and the problems they face, including poverty, chronic underemployment, low wages, etc.

EVALUATION

Given the course's format, I expect you to read in advance the material for every session. Active participation is encouraged; my assessment of class participation will include the comments on real-world issues which are parallel to the course's material, and relevant contributions to class discussion.

There will be 3 homework assignments. They will be posted on the course's website. All problem sets should be typed, yet graphs and algebra can be hand-written as long as they are clear and legible. Late assignments will not be accepted under any circumstance.

There will be one midterm exam and one final exam, which will be cumulative. Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Participation and Problem Sets	30%
Midterm Exam	30%
Final Exam	40%

REFERENCES

The required textbooks for the course are:

Mavrotas, George and Shorrocks, Anthony (Eds.). *“Advancing Development: Core Themes in Global Economics.”* World Institute for Development Economics Research, 2007.

Ray, Debraj. *Development economics.* Princeton University Press, 1997.

The edited volume of Mavrotas and Shorrocks (hereafter AD2007) and the textbook of Ray (hereafter DE1997) are the required texts for this course. Alternative sources such as electronic notes and other useful texts will be posted electronically on the course's website.

Lectures and text readings are complements, not substitutes, and students are responsible for material presented in both lectures and readings. Regular class attendance is strongly advised.

Some additional books that will prove useful are:

Amsden, Alice. *The rise of “the rest”: Challenges to the West from Late-Industrializing economies*. Oxford: Oxford University Press, 2001.

Basu, Kaushik. *Analytical development economics: the less developed economy revisited*. Cambridge, MA: MIT Press, 1997.

Jaime, Ros. *Development theory and economics of growth*. Ann Arbor: University of Michigan Press, 2000.

Krueger, Anne O. *Political Economy of Policy Reform in Developing Countries*. Cambridge, MA: The MIT Press, 1993.

Lal, Deepak. *The poverty of “development economics”*. Cambridge, MA: The MIT Press, 2000.

Maddison, Angus. *Phases of capitalist development*. Paris: OECD Development Center, 2001.

Mokyr, Joel. *The lever of riches*. New York: Oxford University Press, 1990.

Parente, Stephen and Prescott, Edward C. *Barriers to riches*. Cambridge, MA: MIT Press, 2000.

COURSE OUTLINE

I Development Economics in Retrospect

“The Evolution of the Development Doctrine”, AD2007 Ch. 1

“Turning Points in Development Thinking and Practice”, AD2007 Ch. 2

“Economic Development: Overview”, DE1997 Ch. 2

Bardhan, Pranab. “Economics of Development and the Development of Economics” *Journal of Economic Perspectives*, Spring 1993, 7(2), pp. 129-42.

Ray, Debraj. “What’s New in Development Economics?” *American Economist*, Fall 2000, 44(2), pp. 3-16.

II Analytcs of Growth and Development

“Economic Growth”, DE1997 Ch. 3

“New Growth Theories”, DE1997 Ch. 4

III Poverty and Inequality

“Economic Inequality”, DE1997 Ch. 6

“Inequality and Development: Interconnections”, DE1997 Ch. 7

“Poverty and Undernutrition”, DE1997 Ch. 8

“Inequality in Historical Perspective”, AD2007 Ch. 4

“Health Improvements and Health Inequality during the Last 40 Years”, AD2007 Ch. 5

IV Globalization and Development Strategies

“Trade Policy”, DE1997 Ch. 17

V China and India: Challenges

Bosworth, Barry and Collins, Susan M. “Accounting for Growth: Comparing China and India.” *NBER Working Paper Series*, No: 12943, February 2007.

Kochbar, Kalpana; Kumar, Utsav; Raghuram, Rajan; Subramanian, Arvind and Tokatlidis, Ioannis. “India’s Pattern of Development: What Happened, What Follows?” *Journal of Monetary Economics*, July 2006, 53(5), pp. 981-1019.

Lal, Deepak. “India and China: Contrasts in Economic Liberalization?” *World Development*, September 1995, 23(9), pp. 1475-94.

Young, Alwyn. “Gold into Base Metals: Productivity Growth in the People’s Republic of China during the Reform Period.” *Journal of Political Economy*, December 2003, 111(6), pp. 1220-61.

VI Development Economics in Prospect

“The Human Dimensions of the Global Development Process in the Early Part of the 21st Century: Critical Trends and New Challenges”, AD2007 Ch. 35

“Development Questions for 25 Years”, AD2007 Ch. 36

Good Luck!

International Economics

GOALS

What is international economics about? International economics is about how nations interact through trade of goods and services, through flows of money and through investment.

International economics is an old subject, but it continues to grow in importance as countries become tied to the international economy. Nations are more closely linked through trade in goods and services, through flows of money, and through investment than ever before. Our goal is to examine these issues to understand today's globalized world.

EVALUATION

Given the course's format, I expect you to read in advance the material for every session. Active participation is encouraged; my assessment of class participation will include the comments on real-world issues which are parallel to the course's material, and relevant contributions to class discussion.

There will be 6 homework assignments. They will be posted on the course's website. All problem sets should be typed, yet graphs and algebra can be hand-written as long as they are clear and legible. Your lowest homework grade will be dropped. Late assignments will not be accepted under any circumstance.

There will be two midterm exams and one final exam. All exams will be cumulative. Your final grade in the class will be determined as the following weighted average of your work throughout the semester

Participation	10%
Problem Sets	10%
Midterm Exam I	25%
Midterm Exam II	25%
Final Exam	30%

TEXTBOOK

Krugman, Paul R. and Obstfeld, Maurice. *International Economics: Theory and Policy*. Addison-Wesley, 2008 (8th edition).

Krugman and Obstfeld (hereafter KO) is the required text for this course. Alternative sources such as electronic notes and other useful texts will be posted electronically on the course's website. Moreover, we will study scientific papers published in top economic journals to improve our understanding of the materials.

Lectures and text readings are complements, not substitutes, and students are responsible for material presented in both lectures and readings. Regular class attendance is strongly advised.

COURSE OUTLINE

I International Trade Theory

1. “The Ricardian Model”, KO Ch. 3
 - Opportunity costs and comparative advantage
 - A one factor Ricardian model
 - Production possibilities
 - Gains from trade
 - Wages and trade
 - Misconceptions about comparative advantage
 - Transportation costs and non-traded goods
 - Empirical evidence

2. “Resources, Comparative Advantage, and Income Distribution”, KO Ch. 4
 - Production possibilities
 - Relationship between goods prices, factor prices and factor levels
 - Relationship between goods prices, factor prices and factor levels
 - Trade in the Heckscher-Ohlin model
 - Factor price equalization
 - Income distribution and income inequality
 - Empirical evidence

3. “The Standard Trade Model”, KO Ch. 5
 - Measuring the values of production and consumption
 - Welfare and terms of trade
 - Effects of economic growth
 - Effects of international transfers of income
 - Effects of import tariffs and export subsidies
 - Income distribution

4. “Economies of Scale, Imperfect Competition, and International Trade”, KO Ch. 6
 - Types of economies of scale
 - Types of imperfect competition
 - Monopolistic competition and trade
 - Inter-industry trade and intra-industry trade
 - Dumping
 - External economies of scale and trade

5. “International Factor Movements”, KO Ch. 7
 - International labor mobility
 - International borrowing and lending
 - Foreign direct investment and multinational firms

II International Trade Policy

1. “The Instruments of Trade Policy”, KO Ch. 8
 - Partial equilibrium analysis of tariffs
 - Costs and benefits of tariffs
 - Export subsidies
 - Import quotas
 - Voluntary export restraints
 - Local content requirements
2. “The Political Economy of Trade Policy”, KO Ch. 9
 - The cases for free trade
 - The cases against free trade
 - Political models of trade policy
 - International negotiations of trade policy and the WTO
3. “Trade Policy in Developing Countries”, KO Ch. 10
 - Import substituting industrialization
 - Trade liberalization since 1985
 - Export oriented industrialization

III Open Economy Macroeconomics

1. “National Income Accounting and the Balance of Payments”, KO Ch. 12
 - National income accounts
 - National saving, investment and the current account
 - Balance of payments accounts
2. “Exchange Rates and the Foreign Exchange Market”, KO Ch. 13
 - The basics of exchange rates
 - Exchange rates and the prices of goods
 - The foreign exchange markets
 - The demand for currency and other assets
 - A model of foreign exchange markets
3. “Money, Interest Rates, and Exchange Rates”, KO Ch. 14
 - What is money?
 - Control of the supply of money
 - The demand for money
 - A model of real money balances and interest rates
 - A model of real money balances, interest rates and exchange rates
 - Long run effects of changes in money on prices and interest rates

4. “Price Levels and the Exchange Rate in the Long Run”, KO Ch. 15
 - Law of one price
 - Purchasing power parity
 - Long run model of exchange rates: monetary approach
 - Relationship between interest rates and inflation: Fisher effect
 - Shortcomings of purchasing power parity
 - Long run model of exchange rates: real exchange rate approach
 - Real interest rates

5. “Output and the Exchange Rate in the Short Run”, KO Ch. 16
 - Determinants of aggregate demand in the short run
 - A short run model of output market equilibrium
 - A short run model of asset market equilibrium
 - A short run model for both output market and asset market equilibrium
 - Effects of changes in monetary and fiscal policies
 - Adjustment of the current account over time
 - *IS-LM* model

IV International Macroeconomic Policy

1. “The International Monetary System, 1870-1973”, KO Ch. 18
 - Goals of macroeconomic policies
 - Gold standard
 - Interwar years
 - Bretton Woods system
 - Collapse of the Bretton Woods system
 - International effects of US macroeconomic policies

2. “Macroeconomic Policy under Floating Exchange Rates”, KO Ch. 19
 - Arguments for flexible exchange rates
 - Arguments against flexible exchange rates
 - Foreign exchange markets since 1973
 - Interdependence of large countries

3. “Optimum Currency Areas”, KO Ch. 20
 - The European Union
 - The European Monetary System
 - Policies of the EU and the EMS
 - Theory of optimal currency areas
 - Is the EU an optimal currency area?
 - Other considerations of an economic and monetary union

Good Luck!

Sophomore seminars for undergraduate students in social sciences

GLOBALIZATION AND SOCIETY

Course Description

Globalization is an often-discussed but seldom-defined phenomenon. At a broad level, globalization is an increase in the impact on human activities of forces that span national boundaries. These activities can be economic, social, cultural, political, technological, or even biological, as in the case of disease. Additionally, all of these realms can interact.

Globalization has taking place for centuries and, with time, has accelerated, from the colonization of the inhabited parts of the world to the appearance of nations, from conquests to independent countries, from sailboats and caravans to steamboats, truck fleet and cargo planes, from trade in a few commodities to global production and distribution networks and to the present explosion of international flows services, capital, and information.

The effects of globalization are widely debated. Globalization attracts increasing interest and importance in contemporary world affairs. It also inspires passionate supporters and critics. This class is aiming to explore different facets of the complex, evolving phenomenon of globalization. The course introduces the main debates about the global economy and their implications for real life from many different aspects: culture, economics, gender differences, etc. We will illustrate what globalization has seemed to accomplish and what problems are being faced.

First, we will discuss the various definitions for the concept of globalization. Then, we will try to develop a historical point of view to understand the roots of globalization. After this general discussion on the subject, we will assess the importance of globalization via different disciplines and perspectives. Globalization has five primary economic dimensions: trade, finance, aid, migration, and ideas. Do increases in these dimensions of globalization, if managed in a way that supports development in all countries, can help to alleviate global poverty?

The impact of globalization on culture and the impact of culture on globalization merit discussion. Globalization has economic roots and political consequences, but it also has brought

into focus the power of culture in this global environment - the power to bind and to divide in a time when the tensions between integration and separation tug at every issue that is relevant to international relations.

The next topic that we will discuss is the interaction of sociology and globalization. Sociology has been traditionally defined as the study of society and as the boundaries of society have expanded from local community, through states to global society, sociology has become the study of the global society. This is a good illustration of how ideas, knowledge and (social) sciences expand with the changes and expansion of realities.

What is the role of globalization understanding of gender relations in the 21st century? We will spend a week to investigate this question. Gender relations refer to the sum of social norms, conventions and practices which regulate the multifaceted relationships between men and women in a given society at a given time. One pervasive trait of gender relations across different cultures consists of the power asymmetries between men and women.

The next topic is about the environment and globalization. Economic globalization impacts the environment and sustainable development in a wide variety of ways and through a multitude of channels. In recent years, rapidly rising global concentrations of atmospheric pollutants have threatened to cause severe damage to the ozone layer as well as dramatic climatic changes such as global warming. To reduce the severity of these environmental threats, global emissions must be sharply curtailed.

The aim of the next topic is to explore and demonstrate the role of the media in the process of globalization by introducing the relevant literature, by examining various aspects of globalization and by identifying their relevance in understanding the media.

Lastly, we will talk the challenges to globalization. Is Globalization a vital step toward both a more stable world and better lives for the people in it? There is no single answer for this question. All the topics that mentioned above are the parts of this question.

Course Objectives

A main objective of this class is to familiarize students with ideas, concepts, and ways of analyzing globalization. Upon successful completion of this course, students will be able to do the following:

- Recognize and understand the basic concepts of globalization and its interaction with the world we live in.
- Assess the trajectory globalization has taken, and begin to consider new directions for globalization and society.
- Enter the global dialogue that is a product of globalization.
- Improve their written and spoken communication skills.

Course Requirements

The class is open to all students from any major. Students in economics, history, sociology, planning, communication and journalism, and international relations are especially welcomed. There is NO prerequisite for the class.

Participation: The Class will meet **2 hours each week in a seminar format**. Active, effective contribution to seminar discussion is the most important expectation of participation in the course.

Each session will cover one theme as per the syllabus of the course. Students will be encouraged to participate actively in the discussion. Students are expected to read readings. There will be no control of the readings, but it is assumed that the readings included in the syllabus will help considerably the understanding of the subject, thus the elaboration of the papers and the participation in the discussion in class.

Grading: There is one requirement to pass this class: writing of a paper on a topic related to the area of study in the course. The paper must be analytical, and deal with a concrete topic. The topic of the paper has to be decided in agreement with the instructor during the first month of the class. Yet the students are completely free to choose their own topic.

Length of the paper is flexible: not a letter, not a book, not a message. Quality matters, not quantity. Quality is measured by the originality of the thinking, and the analytical capacity demonstrated in the paper. To write a good paper, you will need to develop a clear argument or point of view in relation to the materials you are using as background information. This kind of paper makes sense if you want to explore one of the topics covered in the course in greater depth.

The students may also be inspired by any sentence or paragraph appears in the books, press, etc. Students, in this case, write their paper based on the arguments that are interested in. I present the following examples that can be used in the writing process.

1. Consider the following quotations:

A world integrated through the market should be highly beneficial to the vast majority of the world's inhabitants.

Martin Wolf (2004)

While promoters of globalization proclaim that this model is the rising tide that will lift all boats, citizen movements find that it is instead lifting only yachts.

International Forum on Globalization

2. Looking back on the end of the 19th century, John Maynard Keynes, one of the most influential economists of all time, described the vanishing of the British economic empire as follows:

The inhabitant of London could order by telephone, sipping his morning tea in the bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep; he could at the same moment and by the same means adventure his wealth in the natural resources and new enterprises of any quarter of the world, and share, without exertion or even trouble, in their prospective fruits and advantages; or he could decide to couple the security of his fortunes with the good faith of the townspeople of any substantial municipality in any continent that fancy or information might recommend...But. Most important of all, he regarded this state of affairs as normal, certain, and permanent, except in the direction of further improvement, and any direction of further improvement, and any deviation from it as aberrant, scandalous, and avoidable.

Keynes (1920, pp.11-12)

3. *For the first time in human history, the world is close to creating a single, unified global system.*

UNITED NATIONS, *Human Development Report, 1992*

4. *We are at the service of the world's peoples and we must listen to them. They are telling us that our past achievements are not enough. They are telling us we must do more, and do it better.*

Kofi Annan,
Secretary General of the United Nations and 2001 Nobel laureate for Peace

5. *These constructs that we're living in now—economic globalization based on the growth imperative— is killing the planet. It's dividing the Earth into rich and poor.*

Maude Barlow, "Canada AM," CTV News, March 26, 2001

Course Outline and Readings

Week 1: Introduction and Definition of Globalization

At the most generic level, globalization is simply the shrinking of geographic space of politically defined borders that accelerates and magnifies flows of money, goods, people and culture around the world.

Readings: What is Globalization?
<http://globalization.about.com/od/whatisit/index.htm>

Friedman, Thomas L. *The World is Flat*. New York: Farrar, Straus and Giroux, 2005 (especially Introduction).

Stiglitz, Joseph E. *Making Globalization Work*. WW Norton: 2006

Week 2: Stages of the Modern Era of Globalization: A Historical View

Globalization has deep historical roots. Although in popular accounts globalization is a recent phenomenon, historians recognize that, in some important respects, it is not new. Economic historians date the modern era of globalization to approximately 1870. The period from 1870 to 1914 is often considered to be the birth of the modern world economy. The first modern stage of globalization was followed by two additional stages, one from the late 1940s to the mid-1970s and another from the mid-1970s to the present.

Readings: **Friedman, Thomas L.** *The World is Flat*. New York: Farrar, Straus and Giroux, 2005.

Fukayama, Francis. *The End of History and the Last Man*. New York: Free Press, 1992.

Week 3: *Economic Dimensions of Globalization*

Globalization has changed the natures and qualities of the different economic dimensions. We will try to understand some of the dimensions as follows. **Trade** is the exchange of goods and services among countries. **Finance** involves the exchange of assets or financial instruments among countries. **Aid** involves the transfer of loans and grants among countries, as well as technical assistance for capacity building. **Migration** takes place when persons move between countries either temporarily or permanently, to seek education and employment or to escape adverse political environments. **Ideas** are the broadest globalization phenomenon. They involve the generation and cross-border transmission of intellectual constructs in areas such as technology, management, or governance.

Readings: Development and Globalization: Facts and Figures
http://www.unctad.org/en/docs/gdscsir20041_en.pdf

Bhagwati, Jagdish. *In Defense of Globalization*. Oxford University Press, 2004.

Week 4: *Effects of Globalization on Culture: Identity, Culture, and Conflict*

World culture refers to the cultural complex of foundational assumptions, forms of knowledge, and prescriptions for action that underlie globalized flows, organizations, and institutions. It encompasses webs of significance that span the globe, conceptions of world society and world order, and models and methods of organizing social life that are assumed to have worldwide significance or applicability.

Cultural implication is that globalization involves not the simple enforced distribution of a particular western (say, liberal, secular, possessive-individualist, capitalist-consumerist) lifestyle,

but a more complicated dissemination of the entire range of institutional features of cultural modernity.

- Readings:** Globalization and Culture:
http://www.cato.org/pubs/policy_report/v25n3/globalization.pdf
- Globalization and Cultural Identity
<http://www.polity.co.uk/global/pdf/GTReader2eTomlinson.pdf>
- Globalization and World Culture
<http://www.sociology.emory.edu/jboli/isb408026.pdf>

Week 5: *Sociology of Globalization*

Sociology has long been concerned with comparisons across societies and relations among them. While nations remain key units of social analysis, our understanding of societies as an analytical unit defined by the geographical boundaries of nation states must be complemented by analysis of what is going on at the global level. Sociology is needed to have historically-oriented knowledge that integrates insights from economics, history, political science, and anthropology so that we can better able to analyze a large-scale social change over long periods of time.

- Readings:** Glocalization as Globalization: Evolution of a Sociological Concept
<http://www.bangladeshsociology.org/Habib%20%20journal%20Paper%20GlobalizationHHK,%20PDF.pdf>
- Moore, W.E.** (1966) "Global Sociology: The World as a Singular System"
American Journal of Sociology, 71 (5).

Week 6: *Gender and Globalization*

The purpose of this section is to give such an overview of our current knowledge of the complex relationship between gender inequalities, on the one hand, and the economic liberalization policies that underpin globalization processes, on the other. More specifically, we will examine:

- The gender-differentiated effects of globalization;
- The effects of gender inequalities on the outcomes of globalization processes;

- Initiatives by a variety of actors, including governments, civil society organizations and international institutions that aim to promote gender equality, including in the sphere of policies and outcomes of globalization.

Readings: Gender and Globalization:
http://www.ilo.org/public/english/bureau/integration/download/publicat/4_3_204_wcsdg-wp-19.pdf

Ehrenreich, B and A.R. Hochschild, eds. 2003. *Global Woman: Nannies, Maids and Sex Workers in the New Economy*. New York: Metropolitan Books.

Naples, N. and M. Desai, eds. 2002. *Women's Activism and Globalization: Linking Local Struggles and Transnational Politics*. London: Routledge

Week 7: Globalization and Environment

This session stresses that globalization impacts the environment and sustainable development in a wide variety of ways and through a multitude of channels.

The primary goals of the session are:

- to identify the key links between globalization and environment
- to identify the major issues addressed in multilateral economic agreements in trade and finance that affect environmental sustainability
- to review priority policy issues affecting the environment in multilateral economic agreements and environment, thus identifying incentives implicit in trade and investment policy measures that affect environmental sustainability

Readings: "A New Agenda for Global Warming." *The Economists' Voice*, Vol. 3, No. 7, Article 3.

World Bank, *World Development Report, 1992: Development and the Environment* (New York: Oxford University Press, 1992), box 9.5. For the full report plus analysis, see United Nations, *The Global Partnership for Environment and Development: A Guide to Agenda 21* (New York: United Nations, 1992), and *World Resources, 1994–1995*, chap.13.

Globalization and Environmental Protection: a Global Governance Perspective
<http://www.tilburguniversity.nl/globus/activities/conference/papers/ivanova.pdf>

Week 8: *The Media and Globalization*

This section is about globalization focusing on the role of media. Globalization has brought about changes in the way we live. There is practically no globalization without media and communications. Yet this relationship is so obvious it is often overlooked.

Media has been central to the different forms of globalization. Indeed, the consolidation of mainstream media ownership into the hands of fewer companies concomitant with the rise of a global market place and rapid technological innovation has resulted in the widespread discussion of communications and globalization. We will discuss that globalization cannot be understood without studying the role of the media.

Readings: **Rantanen, Terhi.** *The Media and Globalization*. Thousand Oaks, CA: Sage, 2005

Volkmer, Ingrid. *News in the Global Sphere: A Study of CNN and Its Impact on Global Communication*. Luton: University of Luton Press, 1999. 91-217.

Central Intelligence Agency (2004). Internet Users. *World Factbook*.
<http://www.cia.gov/cia/publications/factbook/rankorder/2153rank.html>

Week 9: *Challenges of Globalization: IS A BETTER WORLD POSSIBLE?*

We live in an increasingly interdependent world. For developing countries, dependence on rich nations is and has always been a stark fact of economic life. It is the principal reason for their heightened interest in promoting greater individual and collective self-reliance.

At the same time, the developed world, which once prided itself on its apparent economic self-sufficiency, has come to realize that in an age of dramatically increased capital flows, increasingly scarce natural and mineral resources, global environmental threats, accelerated international illegal migration, and burgeoning world trade, it too is becoming ever more economically dependent on the developing world.

Readings: Ancelevici, M. 2002. Organizing against globalization: The case of ATTAC in France. *Politics & Society* 30 (3):427-463.
 see also: <http://attac.org/indexen/index.html>

 International Forum on Globalization, “Alternatives to Economic Globalization” 2002.
 available at http://www.ifg.org/alt_eng.pdf

Robert D. Kaplan, “The coming anarchy: How scarcity, overpopulation, tribalism, and disease are rapidly destroying the social fabric of our planet,” *Atlantic*, February 1994, pp. 44–76. (For a particularly provocative analysis of the threat of global anarchy rather than global harmony)

Globalization, Diets, and Non-communicable Diseases.
<http://whqlibdoc.who.int/publications/9241590416.pdf>

Week 10: *Concluding Remarks*

Submission of the seminar paper.

SOCIETY AND PUBLIC INTELLECTUALITY

Course Description

What is the social scientist's role as a public intellectual? This question has been asked for centuries. Changes in today's society are so pervasive and are unfolding so quickly that is difficult to understand them in a comprehensive manner. These transformations are global in nature, but have local consequences and go a long way toward shaping lives at the interpersonal level. As the forces of Western capitalism continue to spread to the far reaches of the planet, newer modes of communication and transportation are connecting disparate cultures more extensively than ever before.

The attempt to comprehend today's society at both the institutional and individual levels has facilitated a renewed interest in the work of social scientists. Their expertise in a range of areas such as politics, economics, and culture has drawn them into the domain of public affairs in a number of ways. Social scientific knowledge is systematically derived, but it also fundamentally interpretive and can shed new light on complex practical questions. Researchers have the ability to examine what appear on the surface to be isolated occurrences and to demonstrate how these are connected to one another and to larger societal changes.

In addition to informing public policy, social scientific work can also involve stepping into the arena of public opinion. This raises the question of the place of social scientific knowledge in relation to the perspectives of members of the broader population in democratically organized societies. Is the goal of social inquiry in this setting to influence the directions of popular sentiment, or is it to provide assessments of the social world that are limited in their persuasive appeal but enlightening to those who may seek them out on their own?

Although political and economic institutions continue to influence the course of academic knowledge, opportunities remain for social scientist to act independently of these constraints and approach their work as public intellectuals.

Course Objectives

A main objective of this class is to familiarize students with ideas, concepts, and relations of social sciences and public intellectuality. The seminar is designed to give students exposure to interdisciplinary research and to show them how approaches to the same topic differ between

disciplines. Another goal of the class is to teach students to analyze scientific papers critically. Active class participation is essential to the success of the seminar and will be encouraged by contrasting findings from scientific research with the students' own intuition.

Course Requirements

This seminar is a two-unit class that meets once a week for two hours at a time. The seminar is going to be graded only **Credit** or **No Credit**. Two-unit classes require less work than four-unit classes, so you can sign up, earn a couple of extra units, and learn about something completely different from your major or minor. The class is open to all students from any major. Students in economics, history, sociology, philosophy, communication and journalism, and international relations are especially welcomed. There is NO prerequisite for the class.

Participation: The Class will meet **2 hours each week in a seminar format**. Active, effective contribution to seminar discussion is the most important expectation of participation in the course.

Each session will cover one theme as per the syllabus of the course. Students will be encouraged to participate actively in the discussion. Students are expected to read the materials. There will be no control of the readings, but it is assumed that the readings included in the syllabus will help considerably the understanding of the subject, thus the elaboration of the papers and the participation in the discussion in class.

In this class, we will use Charles F. Gattone's recent book *The Social Scientist as Public Intellectual: Critical Reflections in a Changing World* to look at findings from economics, history, psychology and sociology about the role of intellectual life in the 21st century. In addition, students are expected to read papers that are going to be posted on the seminar website and will complement the readings in the book.

Grading:

There are two requirements to pass this class: *Reading* and *Talking*.

Each student will prepare two presentations. Students are completely free to organize their talk from different perspectives to help them improve their creative and original thinking.

❖ 1st Presentation: *15-minute Talk*

Each student will do a small scale presentation, which cannot exceed 15 minutes. This presentation will include the analysis of a scientific paper critically.

❖ 2nd Presentation: *30-minute Talk*

Each student will do a large- scale presentation, which will be around 30-45 minutes. This presentation will include the overall views of the students regarding the public intellectuality and the scientists' role in the new century.

The students may also be inspired by any sentence or paragraph appears in the books, press, etc. Students, in this case, present their ideas based on the arguments that they are interested in.

Selected Readings (going to be posted on the seminar website)

- [1] Public Intellectuals and Civil Society
http://research.yale.edu/ccs/research/working-papers/alex_pubIntCivSoc.pdf
- [2] **Becker, George.** "Two Developments in the Rise of the Modern Intellectual." *The School Review*, August 1979, 87(4), pp. 398-412.
- [3] **Bronowski, J.** "A Twentieth Century Image of Man." *Leonardo*, Spring 1974, 7(2), pp. 117-21.
- [4] **Cournand, André.** "The Code of the Scientist and Its Relationship to Ethics." *Science*, November 1977, 198(4318), pp. 699-705.
- [5] **Eidelberg, Paul.** "Intellectual and Moral Anarchy in American Society." *The Review of Politics*, January 1970, 32(1), pp. 32-50.
- [6] **Graff, Gerald; Lacapra, Dominick; Robbins, Bruce; Aimone, Joseph O.; Short, Bryan C.; Miller, J. H.; Hassan, Ihab; and Mignolo, Walter D.** "Today, Tomorrow: The Intellectual in the Academy and in Society." *PMLA*, October 1997, 112(5), pp. 1132-41.

- [7] **Ihde, Aaron J.** "Responsibility of the Scientist to Society." *The Scientific Monthly*, November 1953, 77(5), pp. 244-49.
- [8] **Kadushin, Charles; Hover, Julie and Tichy, Monique.** "How and Where to Find Intellectual Elite in the United States." *The Public Opinion Quarterly*, Spring 1971, 35(1), pp. 1-18.
- [9] **Madsen, David.** "The Scholar, the Scientist, and Society: Unifying the Intellectual Community." *The Journal of Higher Education*, February 1967, 38(2), pp. 96-101.
- [10] **Mora, Jose F.** "The Intellectual in Contemporary Society." *Ethics*, January 1959, 69(2), pp. 94-101.
- [11] **Park, Robert E.** "Missions and the Modern World." *The American Journal of Sociology*, November 1944, 50(3), pp. 177-83.
- [12] **Zilsel, Edgar.** "The Sociological Roots of Science." *Social Studies of Science*, December 2000, 30(6), pp. 935-49.
- [13] **Whitney, Vincent H.** "Science, Government, and Society." *Annals of the American Academy of Political and Social Science*, January 1960, 327, pp. 50-58.

POETRY AND SCIENCE

Course Description

Both poetry and science are products of human wit. Both have histories which, if separable from each other, are at least sometimes intermingled and mutually influential. Both are attempts to express in appropriate symbols-to render amenable to contemplation- as much as possible of the rich panorama of amalgamated human experience and gross existence. Their affinity, however, does not seem altogether confined to these generalities, and the two in some respects appear as deeply similar instruments in the endeavor to symbolize and communicate with reference to experience and existence.

Course Objectives

Both art and science allow us to confront or grasp reality, and it is enlightening to compare the ways in which they make it possible. Whether the end result is a work of art or science, the act of creating has many similarities. At the same time, the differences between the two disciplines can reveal much about the nature of both.

Scientific concepts themselves can also be used to describe and aid the understanding of some aspect of art. These concepts can also influence or inspire artists who use science as the subject matter or basis of their work.

A main objective of this class is to familiarize students with ideas, concepts, and relations of poetry and science. The seminar is designed to give students exposure to interdisciplinary research and to show them how approaches to the same topic differ between disciplines. Another goal of the class is to teach students to analyze scientific papers critically. Active class participation is essential to the success of the seminar and will be encouraged by contrasting findings from scientific research with the students' own intuition.

Course Requirements

This seminar is a two-unit class that meets once a week for two hours at a time. The seminar is going to be graded only **Credit** or **No Credit**. Two-unit classes require less work than four-unit classes, so you can sign up, earn a couple of extra units, and learn about something completely different from your major or minor. The class is open to all students from any major. Students in

economics, history, sociology, philosophy, communication and journalism, and international relations are especially welcomed. There is NO prerequisite for the class.

Participation

The Class will meet **2 hours each week in a seminar format**. Active, effective contribution to seminar discussion is the most important expectation of participation in the course. Each session will cover one theme as per the syllabus of the course. Students will be encouraged to participate actively in the discussion. Students are expected to read the materials. There will be no control of the readings, but it is assumed that the readings included in the syllabus will help considerably the understanding of the subject, thus the elaboration of the papers and the participation in the discussion in class.

In this class, we will use Mary Midgley's recent book *Science and Poetry* to look at findings from economics, history, psychology and sociology about the role of intellectual life in the 21st century. In addition, students are expected to read papers that are going to be posted on the seminar website and will complement the readings in the book.

Grading

There are two requirements to pass this class: *Reading* and *Talking*. Each student will prepare two presentations. Students are completely free to organize their talk from different perspectives to help them improve their creative and original thinking.

❖ 1st Presentation: *15-minute Talk*

Each student will do a small scale presentation, which cannot exceed 15 minutes. This presentation will include the analysis of a scientific paper critically.

❖ 2nd Presentation: *30--minute Talk*

Each student will do a large- scale presentation, which will be around 30-45 minutes. This presentation will include the overall views of the students regarding interactions of the science poetry in the new century.

The students may also be inspired by any sentence or paragraph appears in the books, press, etc. Students, in this case, present their ideas based on the arguments that they are interested in.

Selected Readings

- [1] **Arnett, Willard E.** "Poetry and Science." *The Journal of Aesthetics and Art Criticism*, June 1956, 14(4), pp. 445-452.
- [2] **Bessis, Marcel.** "Science, Dreams and Poetry." *Leonardo*, Autumn 1979, 12(4), pp. 316-20.
- [3] **Brooks, W. K.** "Science or Poetry." *Science*, October 1895, 2(40), pp. 437-40.
- [4] **Drake, Stillman.** "Galileo's Language: Mathematics and Poetry in a New Science." *Yale French Studies*, 1973, 49, pp. 13-27.
- [5] **Gottschalk, Robert.** "Science and Poetry." *Science*, March 1955, 121(3143), pp. 444-45.
- [6] **Larrabee, Eric.** "Science, Poetry, and Politics." *Science*, April 1953, 117(3042), pp. 395-99.
- [7] **Pevsner, Antoine.** "Science Foils Poetry." *Leonardo*, Autumn 1977, 10(4), pp. 324-25.
- [8] **Stewart, George R.** "Color in Science and Poetry." *The Scientific Monthly*, January 1930, 30(1), pp. 71-78.
- [9] **The Poetry-Science Connection**
<http://www.garfield.library.upenn.edu/essays/v6p223y1983.pdf>
- [10] **Further Reflections on the Poetry-Science Connection**
<http://www.garfield.library.upenn.edu/essays/v9p048y1986.pdf>