

# ABDUL WALI KHAN UNIVERSITY

## MARDAN



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## PhD ECONOMICS

# Scheme of Studies

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## **Ph.D ECONOMICS**

### **(Scheme of Studies)**

<b>Year 1</b>		
<b>Course Code</b>	<b>Semester I</b>	<b>Credit Hours</b>
ECON 801	Microeconomic Analysis	3
ECON 802	Macroeconomic Analysis	3
ECON 851	Applied Econometrics	3
<b>Course Code</b>	<b>Semester II (Any three of the optional courses)</b>	<b>Credit Hours</b>
ECON 803	International Economics	3
ECON 852	Research Methodology	3
ECON 853	Economic Growth and Development	3
ECON 804	Environmental Economics	3
ECON 854	International Trade Theory	3
ECON 855	Labour Economics	3
ECON 856	Theory of the Firm and Market Structure	3
ECON 857	Applied Time Series Analysis	3
ECON 858	Nonmarket Valuation for Natural Resources	3
<b>Year 2-4</b>		
<b>Course Code</b>	<b>Semester III, IV, V &amp; VI</b>	<b>Credit Hours</b>
ECON-899	Ph.D Thesis/Dissertation	20

**COURSE CODE: ECON-801**  
**COURSE NAME: MICROECONOMIC ANALYSIS**

**Microeconomics Analysis**

The course provides students with a thorough treatment of microeconomics theory, building on a plurality of analytical frameworks such as neoclassical, institutional, structural, evolutionary and critical economic theories. Students will be expected to understand the defining assumptions and internal structure of the different analytical frameworks, including working knowledge of some of the most relevant mathematical formalisms. Conceptual and analytical rigor will be given priority over mathematical treatments. Topics to be discussed will include both neoclassical and non-conventional approaches to Consumer Theory; Production Theories and the Theories of Technical Change; Theories of the Firm and Organizations; Game Theory and Competition; General Equilibrium and Welfare Economics; Asymmetric Information and Market failures.

**Objectives**

- To understand the internal structure and assumptions of the different analytical frameworks, their explanatory power and limitations.
- To summaries and present different theoretical models in a conceptually and analytically rigorous form.
- To demonstrate the ability to identify and apply all relevant optimization techniques for analysis of microeconomic behavior.
- To adopt different analytical concepts and models in framing development and policy-relevant problems.

**Learning Outcomes:**

- Students will be able to identify and explain economic concepts and theories related to the behavior of economic agents, markets, firm structures, social norms and government policies.
- Students will be able to integrate theoretical knowledge with quantitative and qualitative evidence in order to explain past economic events and to formulate predictions on future ones.
- Students will be able to articulate critical features and shortcomings of market structures and government policies and evaluate their effects on individual and social welfare.
- Students will be able to use economic reasoning to formulate and evaluate economic advice and policy.

**COURSE OUTLINES AND WEEKLY CLASS PLAN**

<b>WEEK</b>	<b>TOPICS</b>
<b>Week 1</b>	Mathematics of Optimization
<b>Week 2-3</b>	The profit function for Cobb-Douglas technology, Properties of demand and supply functions, Comparative statics using the first-order conditions, Comparative statics using algebra, Properties of the profit function, Supply and demand functions from the profit function, The envelope theorem
<b>Week 4</b>	Cost Minimization: Calculus analysis of cost minimization, Examples: Cost function for the Cobb-Douglas technology, The cost function for the CES technology, The cost function for the Leontief technology Example: The cost

<b>WEEK</b>	<b>TOPICS</b>
	function for the linear technology, Conditional factor demand functions, Algebraic approach to cost minimization
<b>Week 5</b>	Cost Function: Average and marginal costs, Example: The short-run Cobb-Douglas cost functions Example: Constant returns to scale and the cost function, The geometry of costs Example: The Cobb-Douglas cost curves, Long-run and short-run cost curves, The envelope theorem for constrained optimization
<b>Week 6</b>	Utility Maximization: Consumer preferences, The marginal rate of substitution Consumer behavior, Indirect Utility, Some important identities , Example: The Cobb-Douglas utility function
<b>Week 7</b>	Choice: The Slutsky equation, Example: The Cobb-Douglas Slutsky equation, Properties of demand functions, Comparative statics using the first-order conditions, Solving for the direct utility function, Sufficient conditions for maximization
<b>Week 8</b>	Demand: Homothetic utility functions, Aggregating across goods, Hicksian separability The two-good model, Functional separability, Aggregating across consumers, Inverse demand functions, Continuity of demand functions
<b>Week 9</b>	Consumers' Surplus: Compensating and equivalent variations, Consumer's surplus, Quasilinear utility, Quasilinear utility and money metric utility, Consumer's surplus as an approximation
<b>Week 10</b>	Competitive markets: the profit maximization problem, the industry supply function, different cost function, identical cost function, market equilibrium, several consumers, welfare analysis, efficiency and welfare, the discrete good model
<b>Week 11</b>	Models of Monopoly: Profit maximization and output choice, Price discrimination, Monopoly and resource allocation
<b>Week 12</b>	Traditional Models of Imperfect Competition: Pricing under homogenous oligopoly, Product differentiation
<b>Week 13</b>	Uncertainty: Expected utility, Risk aversion, asset pricing Relative risk aversion, the Allais and Ellsberg paradoxes
<b>Week 14-15</b>	Game Theory: Description of a game, Cournot duopoly, Bertrand duopoly, Nash equilibrium, bargaining models
<b>Week 16</b>	Externalities: Production externality, solutions to the externalities, missing markets, property rights

### Reference Books

- Varian, H.R. Microeconomic Analysis, Norton and Company, New York
- Layard, P.R.G and A. A. Walters, Microeconomic Theory, (Latest Edition) McGraw Hill Publishing Company.
- Silberberg, E. The Structure of Economics: A Mathematical Analysis. McGraw Hill Publishing Company.
- Henderson & Quandt, Microeconomics: A Mathematical Approach.

**COURSE CODE: ECON-802**  
**COURSE NAME: MACROECONOMIC ANALYSIS**

The overall objective of Advanced Macroeconomic is to provide an in depth understanding of modern macroeconomic theories. The course focuses mainly on dynamic macroeconomic models, starting real business cycle models into which New Keynesian macroeconomic features are introduced. Models of unemployment are also addressed. There is a strong emphasis on understanding, solving, analyzing, and evaluating these models. The use of these various models to address current macroeconomic questions will be a constant theme of the course.

**Objectives:**

- The course is designed to comprehend empirical business cycle characteristics of developed economies and the main empirical findings regarding the growth of developed and less developed nations.
- To make students understand of macroeconomic models used to analyze key questions related to business cycles and economic growth. Examples are New Keynesian models, Real Business Cycle models, Overlapping Generations models, the Solow growth model, and first-generation endogenous growth models.
- The course will also discuss some more advanced models that have recently been developed to explain recent economic events.

**Learning Outcomes**

- Students will acquire knowledge and understanding of the main theories of expectations formation; their implications in terms of policy effectiveness; the problem of coordination and its implications for macroeconomics; rationality and irrationality in markets and the role of information.
- Students will learn how to formalize ideas and to work their way from assumptions to conclusions in economic models.

**Teaching and Learning Strategy**

- The Advanced Macroeconomics course is a multi- dimensional course which demands the versatile teaching methods. The faculty keeping in view the challenge adopts modus operandi by efficient use of white board, multimedia (where appropriate) and ensuring the class participation of the students, creating the learning atmosphere. Furthermore, the students are compelled to participate in the class by exposing them to various learning activities including quizzes, class presentations and class tests etc. The students are also timely assessed to keep a check on their progress by evaluating the class tests, quizzes, midterm exams and the final term exams. The methodology adopted for teaching and assessment not only enhances the overall capacity of the student but also helps in achieving the course objectives.

**COURSE OUTLINES AND WEEKLY CLASS PLAN**

<b>WEEK</b>	<b>TOPICS</b>
<b>Week 1-2</b>	Nature and Scope of Macroeconomics, Brief overview of Macroeconomic revolutions i.e. Classical, New Classical, Monetarist and Activist contributions, Microeconomic foundations for macroeconomic analysis
<b>Week 3</b>	Macroeconomic disequilibrium models, Static Model; Consumption, Investment and Money Demand Functions in Classical, Keynesian and Monetarist Frameworks

<b>WEEK</b>	<b>TOPICS</b>
<b>Week 4</b>	Consumption, investment and money demand functions in Classical, Keynesian and Monetarist frameworks
<b>Week 5</b>	The Goods Market and the IS Curve, The Investment demand schedule, investment and the interest rate, The interest rate and aggregate demand: The IS curve, The Slope of the IS curve, The rate of the multiplier, The position of the IS curve
<b>Week 6</b>	The Money Market and the LM curve, The demand for money, The slope of the LM curve, The Position of the LM curve
<b>Week 7</b>	Equilibrium in the goods and money markets, Changes in the Equilibrium levels of Income and the interest rate, Deriving the aggregate demand schedule, The fiscal policy multiplier
<b>Week 8</b>	Closed Economy Macroeconomics : Aggregate demand and fiscal policy, aggregate demand and money supply
<b>Week 9</b>	Relative effectiveness of fiscal and monetary policies in cases of interest, inelastic investment demand and liquidity trap
<b>Week 10</b>	Arguments of ‘crowding out’ and ‘Ricardian equivalence’ against fiscal policy, supply-side view of government taxation, crowding in hypothesis
<b>Week 11</b>	Closed economy Macroeconomics: Aggregate demand and Fiscal policy, Aggregate demand and money supply, relative effectiveness of Fiscal and Monetary policies in cases of interest inelastic investment demand and liquidity rap, arguments of crowding out and Recardian equivalence against Fiscal policy, Crowding in Hypothesis
<b>Week 12</b>	Monetary Policy formulations and implementation: The role of central bank, its power and limitations, Fiscal policy formulations and its implementation, sources of revenue and heads of expenditure of a state, the scope for taxation, objectives of the fiscal policy
<b>Week 13</b>	Open economy macroeconomics: various theories of balance of payments, determination of equilibrium exchange rate
<b>Week 14</b>	Exchange rate management under fixed, managed and floating exchange rate systems, Mundell-Fleming model, effectiveness of monetary and fiscal policies under various exchange rate systems
<b>Week 15</b>	Definition of inflation, Demand Pull vs Cost Push inflation, Macroeconomic implications of inflation, Modeling of inflation: conventional Phillips curve, Backward looking Phillips curve and forward looking frameworks for modeling inflation
<b>Week 16</b>	Trade cycle theories: Kaldor models, Hicks models, Random Walk model and multiplier accelerator model

### Reference Books

- Romer, David (2018) Advanced Macroeconomics 5<sup>th</sup> edition. McGraw-Hill Education
- Froyen, T. Richard (2005). Macroeconomics: Theories and Policies, 8th edition, Pearson Education, Inc.
- Blanchard, Olivier (1997) Macroeconomics. London: Prentice-Hall.
- Dornbush & Fisher – Macroeconomics, latest edition (Latest eds.) McGraw Hill Inc.

**COURSE CODE: ECON-803**

## **COURSE NAME: INTERNATIONAL ECONOMICS**

### **Course Description and Objectives**

This course will provide an introduction to International Economics. The course particularly covers various topics like trade theories, tariffs and non tariff restrictions, open economy balance of payments models, fiscal and monetary policies and foreign exchange market etc. The main objectives of the course, are to leave the students with an understanding of the basic international economic principles and their applicability to real world situations and enable them to incorporate these tools of economic analysis into their own decision-making processes as one weigh costs and benefits to make choices.

### **COURSE OUTLINES AND WEEKLY CLASS PLAN**

<b>WEEK</b>	<b>TOPICS</b>
<b>Week 1</b>	The Subject Matter of International Economics, The Law of Comparative Advantage, Absolute Advantage, Comparative Advantage. Sources of Comparative Advantage, Empirical Tests of the Ricardian
<b>Week 2</b>	The Standard Theory of International Trade, Production Frontier and Community Indifference Curves, Gains from Trade, Trade Based on Differences in Tastes
<b>Week 3</b>	Demand and Supply, Offer Curves, and the Terms of Trade.
<b>Week 4</b>	Economies of Scale, Imperfect Competition, and International Trade, Economies of Scale and International Trade, Imperfect Competition and International Trade
<b>Week 5</b>	Product Differentiation, Intra-Industry Trade, Technological Gap and Product Cycle Model, Transportation Costs, Nontraded Commodities, and the Location of Industry
<b>Week 6</b>	Economic Growth and International Trade, Growth of Production Factors, Technical Growth, Growth and Trade: The Small Country Case Growth and Trade: The Large Country Case Growth, Change in Tastes and Trade in Both Nations
<b>Week 7</b>	Factor Endowments and the Heckscher-Ohlin Theory, Theory of Factor Price Equalization and Income Distribution, Empirical Tests of the Heckscher Ohlin Model
<b>Week 8</b>	Trade Restrictions: Tariffs, The Partial Equilibrium Analysis of Tariffs, The General Equilibrium Analysis of Tariffs, Effective Protection, Arguments for Trade Restrictions
<b>Week 9</b>	Nontariff Trade Barriers and the New Protectionism
<b>Week 10</b>	International Factor Movements, Labour Mobility, Capital Mobility, Multinational Corporations
<b>Week 11</b>	Balance of Payments, the Foreign Exchange Markets and Trade Elasticities, The Balance of Payment Accounts, Supply and Demand in the Foreign Exchange, Market and the Marshall-Lerner Condition, Effects of a Devaluation on the Trade Balance
<b>Week 12</b>	National Income and the Trade Balance, Open-Economy Keynesian Model: The Small-Country and the Large-Country Case, Transmission of Disturbances under Fixed and floating Exchange Rate regimes
<b>Week 13</b>	Expenditure-Switching and Expenditure Reducing Policies, Monetary Policy in an Open-Economy, Keynesian Model, Absorption Approach, Monetary Approach

<b>WEEK</b>	<b>TOPICS</b>
<b>Week 14</b>	Money Supply , the Price Level and the Balance of Payments, The Nonsterilisation Assumption, The Purchasing Power Parity Assumption, The Balassa-Samuelson Model
<b>Week 15</b>	The Internationalization of Financial Markets
<b>Week 16</b>	Fiscal and Monetary Policy and International Capital Mobility, Interdependence, Aggregate Supply and Policy Coordination

### Reference Books

- Dominick Salvatore. 1998. International Economics, Prentice Hall, 6th edition

**COURSE CODE: ECON-851**

**COURSE NAME: APPLIED ECONOMETRICS**

### Course Description

The course provides training in econometric methods and enables students to use these methods in applied research. The courses begin with a short review of the properties of ordinary least squares and covers advance and new topics in the subject area. These topics include seasonality and structural change, heteroscedasticity, autocorrelation, multicollinearity, model selection tests, instrumental variables, and cross section and panel data methods. It is a lab base course that gives hands-on experience to students to carry their econometric estimation. Scholars are taught to use STATA to estimate econometric models and test hypotheses. The main objectives of the course are to teach advance econometric methods to the scholars with a strong focus on applications and give them empirical content to economic theory by formulating economic models in testable form, to estimate those models, and to test them as to acceptance or rejection.

### COURSE OUTLINES AND WEEKLY CLASS PLAN

<b>WEEK</b>	<b>TOPICS</b>
<b>Week 1-2</b>	General Linear Regression Model: Basic structure, assumptions, and estimation of single equal model using Ordinary Least Square (OLS)
<b>Week 3-4</b>	Use of matrix algebra in inference related to multiple regression analysis, derivation of parameters, variance and other statistics using matrix algebra
<b>Week 5-7</b>	Violation of the assumption of linear regression model; nature, causes and remedies of heteroscedasticity, autocorrelation, specification error and multi-co-linearity.
<b>Week 8</b>	Estimation of system of equation; Dummy variables and structural shifts
<b>Week 9-10</b>	Estimation with limited dependent variables: Probit, Logit, Tobit and Heckman models
<b>Week 11-12</b>	The Single Equation Linear Model and OLS Estimation for Cross Section and Panel Data: Overview of the Single Equation Linear Model, Asymptotic Properties of OLS, OLS Solutions to the Omitted Variables Problem, Properties of OLS under Measurement Error



<b>WEEK</b>	<b>TOPICS</b>
<b>Week 13-14</b>	Instrumental Variables Estimation of Single Equation Linear Models: Instrumental Variables and Two Stage Least Squares, General Treatment of 2SLS; Consistency, Asymptotic Normality of 2SLS, Asymptotic Efficiency of 2SLS, Hypothesis Testing with 2SLS, Heteroskedasticity Robust Inference for 2SLS, Solutions to the Omitted Variables and Measurement Error Problems
<b>Week 15</b>	Simultaneous Equations Models: The Scope of Simultaneous Equations Models, Identification in a Linear System; Exclusion Restrictions and Reduced Forms, General Linear Restrictions and Structural Equations, Unidentified, Just Identified, and Overidentified Equations; Estimation after Identification, Different Instruments for Different Equations Problems
<b>Week 16</b>	Panel data models: Fixed and random effect models

### Reference Books

- Gujarati, Damodar.2012. “Basic Econometrics”. 4<sup>th</sup> edition. McGraw-Hill Higher Education.
- Wooldridge, J. 2012 “Introductory Econometrics”. 2<sup>nd</sup> Edition.South-Western College Publisher.
- Wooldridge, J. 2001 “Econometric Analysis of Cross Sectional & Panel Data” The MIT Press
- Greene, W.H. 2004. “Econometric Analysis”. 5th edition. New York.Macmillan.
- Enders, Walter. 2005. “Applied Econometric Time Series”. New York.John Wiley & Sons.Hasio. 2002. “Panel Data Econometrics”. Cambridge University Press 2nd Edition

**COURSE CODE: ECON-852**  
**COURSE NAME: RESEARCH METHODOLOGY**

### Course Description and Objectives

The course consists of the study of how economics functions, how it could function, and how it should function. Like other subject matter, economists produce knowledge. However, what is the relation of the knowledge to the object of inquiry and to the mode of analysis? The statement of knowledge depends on the positions economists take. This course presents the methodological issues involved in the position that an economist takes. The main objectives of the course are to equip the students with skills and help them in preparing and making better presentation of their research work and to conduct research work and write quality research papers.

### COURSE OUTLINES AND WEEKLY CLASS PLAN

WEEK	TOPICS
Week 1	Introduction to research; types of business research
Week 2	The nature of business research, writing a research proposal
Week 3-6	Research proposal, contents, goals, objectives, review of literature, measurement procedures, questionnaire design
Week 7-10	Data collection; computerization, editing, cleaning, reliability and analysis and hypothesis testing using SPSS and STATA; results presentation and interpretation
Week 11	What is the methodology of economics? Economic epistemology
Week 12	Economics as positivism and falsificationism
Week 13	Economics as prediction and deduction
Week 14	Economics as realism
Week 15	Economics as instrumentalism, dualism and apriorism
Week 16	Realism and rhetoric in economics. Final question: Is Economics a Science?

### Reference Books

- G.Fox (1997) Reason and Reality in the Methodologies of Economics Edward Elgar, Cheltenham.
- Ranjit Kumar,(2005), 2<sup>nd</sup> Edition, “Research Methodology”
- David J.Ketchen, (2005) “Research Methodology In Strategy and Management”
- Helle Neergaard & Jhon Parm Ulhoi. 2007, “Handbook of Qualitative Research Methods in Entrepreneurship”
- K.N.Krishnaswamy, Appa L. Sivakumar, M.Mathirajan,(2009), 3<sup>rd</sup> Edition, “Management Research Methodology”
- D.R Krathwohl and N.L. Smith(2005) “How to prepare a Dissertation Proposal”, Syracuse University Press, Syracuse.

**COURSE CODE: ECON-853**  
**COURSE NAME: ECONOMIC GROWTH AND DEVELOPMENT**

**Course Description**

After covering the necessary background on dynamic general equilibrium and dynamic optimization, the course presents the basic models of growth and takes students to the frontier areas of growth theory, including models of human capital, endogenous technological change, technology transfer, international trade, economic development, and political economy. The course integrates these theories with data and shows how theoretical approaches can lead to better perspectives on the fundamental causes of economic growth and the wealth of nations. The main objectives, of the course are to introduce all the foundations for understanding economic growth and dynamic macroeconomic analysis to the students. It also focus upon the big-picture questions of economic growth and economic development, cover models such as basic Solow, neo-classical growth, and overlapping generations, as well as models of endogenous technology and international linkages and address frontier research areas such as international linkages, international trade, political economy, economic development and structural change.

**COURSE OUTLINES AND WEEKLY CLASS PLAN**

<b>WEEK</b>	<b>TOPICS</b>
<b>Week 1</b>	Economic Growth and Economic Development; the questions: Cross country income differences, income and welfare, economic growth and income differences, origins of today’s income differences and world economic growth, conditional convergence, correlates of economic growth, from correlates to fundamental causes
<b>Week 2</b>	The Solow Growth Model: The economic environment of the basic Solow Model, The Solow Model in discrete time, transitional dynamics in the discrete time Solow Model, the Solow Model in continuous time, transitional dynamics in the continuous time Solow Model, Solow Model with technological progress, comparative dynamics
<b>Week 3</b>	The Solow Model and the Data: Growth Accounting, Solow Model and Regression Analysis, The Solow Model with Human Capital, Solow Model and cross country income differences: regression analyses, Calibrating productivity differences, Estimating productivity differences
<b>Week 4</b>	Fundamental Determinants of Differences in Economic Performance: Proximate versus fundamental causes, economies of scale, population, technology and world growth, the four fundamental causes, the four fundamental causes, the effect of institutions on economic growth, political economy of institutions.
<b>Week 5</b>	Foundations of Neoclassical Growth: The representative household model, infinite planning horizon, the representative firm, welfare theorems, optimal growth in discrete and continuous times.
<b>Week 6</b>	The Neoclassical Growth Model: Preferences, Technology and demographics, characterization of equilibrium, optimal growth, steady state equilibrium, transitional dynamics, technological change and the Canonical Neoclassical Model, comparative dynamics, the role of policy
<b>Week 7</b>	Growth with Overlapping Generations: Problems of Infinity, the Baseline Overlapping Generations Model, the Canonical Overlapping Generations Model, over accumulation and Pareto Optimality of competitive equilibrium in

<b>WEEK</b>	<b>TOPICS</b>
	the Overlapping Generations Model, Role of social security in capital accumulation, Overlapping generations with impure altruism, Overlapping generations with perpetual youth, Overlapping generations in continuous time
<b>Week 8</b>	Human Capital and Economic Growth: A simple separation theorem, schooling investments and returns to education, The Ben Porath model, neoclassical growth with physical and human capital, capital skill complementary in an overlapping generations model, Physical and Human Capital with Imperfect labor Markets, Human Capital externalities, Nelson Phelps model of Human Capital
<b>Week 9</b>	First Generation Models of Endogenous Growth: The AK model revisited, The AK model with Physical and Human capital, The two sector AK model, growth with externalities.
<b>Week 10</b>	Modeling Technological Change: Conceptions of technology, science, profits and the market size, the value of innovation in partial equilibrium, the Dixit Stiglitz model and aggregate demand externalities, individual R&D uncertainty and the stock market.
<b>Week 11</b>	Models of Competitive Innovations: The Baseline Model of Competitive Innovations, A One Sector Schumpeterian Growth Model, step by step innovations
<b>Week 12</b>	Direct Technological Change: Importance of biased technological change, basics and definitions, baseline model of directed technological change, directed technological change with knowledge spillovers, directed technological change without scale effects, endogenous labor augmenting technological change
<b>Week 13</b>	Diffusion of Technology: Importance of technology adoption and diffusion, a benchmark model of technology diffusion, human capital and technology, technology diffusion and endogenous growth, appropriate technology and productivity differences, inappropriate technologies, endogenous technological change and appropriate technology
<b>Week 14</b>	Structural Change and Economic Growth: Non-Balanced Growth: The demand and supply sides, Structural change: Migration and transformation of productive relationships
<b>Week 15</b>	Poverty Traps, Inequality and Financial Markets: Multiple equilibria from aggregate demand externalities, human capital accumulation with imperfect capital markets, income inequality and economic development, financial development and economic growth
<b>Week 16</b>	Population Growth and the Demographic Transition: Patterns of Demographic Changes, Population and Growth, A simple model of demographic transition

### Reference Books

- Acemoglu, D.1987. Introduction to Modern Economic Growth. Princeton University Press, 2009.

**Course description and Objectives:**

The course aims to provide a thorough knowledge of modern trade international trade theory. Starting from classical trade models, it covers new trade theory based on increasing returns as well as trade policy questions, and introduces the currently active research areas. The course will enable graduate students to start doing their own research on topics in international trade. Hence, the course will concentrate on workhorse models of trade theory and giving you an overview of active research areas.

Prerequisites: Intermediate Microeconomics

**COURSE OUTLINES AND WEEKLY CLASS PLAN**

Week	Topics
Week 1-5	Classical trade: Ricardo, Heckscher-Ohlin, Specific Factors (Feenstra, Ch 1-3)
Week 6-11	New trade theory: increasing returns (Feenstra, Ch 5) and Trade Policy (Feenstra, Ch 7+8), New Economic Geography
Week 11-13	Gains from trade and PTAs (Feenstra, Ch 6) Political Economy of Trade Policy (Feenstra, Ch 9)
Week 13-16	Organization of the firm (Feenstra, Ch 11)

**Reference Books**

- Robert C. Feenstra. 2004. Advanced International Trade: Theory and Evidence, Princeton University Press.

## **ECON 855 LABOR ECONOMICS**

### **Course description and Objectives:**

The purpose of this course is to use economic analysis to understand the labor market. The course primarily apply supply and demand analysis to the market for labor services in order to understand a variety of labor market phenomenon and policy issues. Specific topics include household production, human capital (especially education), wage differentials, and discrimination.

### **COURSE OUTLINES AND WEEKLY CLASS PLAN**

Week	Topics
Week 1-2	Introduction, labor market overview (Chapter 1-2)
Week 3-6	Labor demand (chapter 3), demand elasticity (chapter 4), labor market frictions (chapter 5)
Week 7-9	Labor supply (chapter 6), household production (chapter 7)
Week 10-11	Compensating Differentials (chapter 8)
Week 12-13	Human Capital: Schooling and Training (chapter 9)
Week 14-15	Economics of Discrimination (chapter 11)
Week 16	Work Mobility and Immigration Chapter 10

### **Reference Books**

- Ehrenberg, Ronald and Smith, Robert. Modern Labor Economics: Theory and Public Policy, Addison-Wesley.

## **ECON 856 THEORY OF THE FIRM AND MARKET STRUCTURE**

### **Course description and Objectives:**

This course surveys the field of industrial organization (IO) and focuses on applied topics, and many of the papers having empirical orientation. The course is designed for graduate students in economics but management students of marketing will also benefit from the theoretical and empirical concepts presented in the course. Some of the readings will be taken from Jean Tirole's *The Theory of Industrial Organization*, so students are strongly urged to purchase the text. Other reading assignments include journal articles as noted on the course outline below.

We will also draw from other texts and collections of readings, including R. Schmalensee and R. Willig, *Handbook of Industrial Organization* (Volumes 1 and 2), North Holland, 1989. Two excellent IO textbooks (written at a slightly lower level than Tirole) that you might want to use as references are D. Carlton and J. Perloff, *Modern Industrial Organization* (4th ed., Pearson, Addison Wesley, 2004) and Luis Cabral, *Industrial Organization* (MIT Press, 2000). Oz Shy - *Industrial Organization*

### **I. INTRODUCTION (Week 1-2)**

R. Schmalensee, "Industrial Organization," in *The New Palgrave: A Dictionary of Economics*, vol. 2, pp. 803-808.

F. M. Scherer, *Industrial Market Structure and Economic Performance* (2nd edition) Chicago: Rand McNally, 1980, Ch. 1, "Introduction."

E. T. Grether, "Industrial Organization: Past History and Future Problems," *American Economic Review*, May 1970, 83-89.

E. S. Mason, "Price and Production of Large-Scale Enterprise," *American Economic Review*, March 1939, 61-74.

### **II. COST STRUCTURE AND MARKET ORGANIZATION (Week 3-4)**

J. C. Panzar, "Technological Determinants of Firm and Industry Structure," *Handbook of Industrial Organization*, North Holland, 1989, Ch. 1, pp. 4-41.

R. Willig, "Multiproduct Technology and Market Structure," *American Economic Review*, May 1979, pp. 346-351.

F. Scherer and D. Ross, "Chapter 4: The Determinants of Market Structure," *Industrial Market Structure and Economic Performance* (3rd edition) Houghton Mifflin, 1990.

### **III. THEORY OF THE FIRM (Week 5-7)**

Tirole, pp. 15-34.

O. Hart, "An Economist's Perspective on the Theory of the Firm," *Columbia Law Review*, 1989, 1757-1774.

R. Coase, "The Nature of the Firm," *Economica*, Nov. 1937, pp. 386-405.

A. Alchian and H. Demsetz, "Production, Information Costs, and Economic Organization," *American Economic Review*, Dec. 1972, pp. 777-795.

S. Grossman and O. Hart, "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy*, August 1986, pp. 691-719.

O. Williamson, "The Modern Corporation: Origins, Evolution, and Attributes," *Journal of Economic Literature*, Dec. 1981, pp. 1537-1568.

Tirole, pp. 35-51.

F. Machlup, "Theories of the Firm: Marginalist, Behavioral, and Managerial," *American Economic Review*, March 1967, pp. 1-33.

- B. Holmstrom and J. Roberts, "The Boundaries of the Firm Revisited," *Journal of Economic Perspectives*, Fall 1998, 73-94.
- M. Jensen and W. Meckling, "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure," *Journal of Financial Economics*, Oct. 1976, pp. 305-360.
- E. Fama, "Agency Problems and the Theory of the Firm," *Journal of Political Economy*, April 1980, pp. 288-307.
- G. Baker and T. Hubbard, "Make versus Buy in Trucking: Asset Ownership, Job Design, and Information," *American Economic Review*, June 2003, 551-572.

#### IV. VERTICAL CONTROL (Week 8-9)

Tirole, pp. 169-186.

- F. Mathewson and R. Winter, "The Economics of Vertical Restraints in Distribution," in J. E. Stiglitz and G. F. Mathewson, *New Developments in the Analysis of Market Structure*, The MIT Press, 1986.
- P. Kaufmann and F. Lafontaine, "Costs of Control: The Source of Economic Rents for McDonald's Franchisees," *The Journal of Law and Economics* October 1994, 417-453.
- F. Scott, "Franchising vs. Company Ownership as a Decision Variable of the Firm," *Review of Industrial Organization*, February 1995, 69-81.

#### V. PRODUCT SELECTION, QUALITY, AND ADVERTISING (Week 10-11)

Tirole, pp. 95-115.

- P. Nelson, "Information and Consumer Behavior," *Journal of Political Economy*, 1970, pp. 311-329.
- P. Milgrom and J. Roberts, "Price and Advertising Signals of Product Quality," *Journal of Political Economy*, August 1986, pp. 796-821.
- G. Akerlof, "The Market for Lemons: Qualitative Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, August 1970, pp. 488-500.
- B. Chezum and B. Wimmer, "Roses or Lemons: Adverse Selection in the Market for Thoroughbred Yearlings," *Review of Economics and Statistics*, August 1997, 521-526.
- B. Wimmer and B. Chezum, "An Empirical Examination of Quality Certification in a 'Lemons Market,'" *Economic Inquiry*, April 2003, 279-291.
- J. Milyo and J. Waldfogel, "The Effect of Price Advertising on Prices: Evidence in the Wake of 44 Liquormart," *American Economic Review*, December 1999, pp. 1081-1096.

#### VI. PRICE DISCRIMINATION (Week 11-12)

Tirole, pp. 133-152.

- W. Oi, "A Disneyland Dilemma: Two-Part Tariffs for a Mickey Mouse Monopoly," *Quarterly Journal of Economics*, Feb. 1971, pp. 77-96.
- W. Adams and J. Yellen, "Commodity Bundling and the Burden of Monopoly," *Quarterly Journal of Economics*, Aug. 1976, pp. 475-498.
- A. Shepard, "Price Discrimination and Retail Configuration," *Journal of Political Economy*, February 1991, pp. 30-53.

#### VII. OLIGOPOLY: SHORT-RUN PRICE COMPETITION (Week 13)

Tirole, pp. 209-224.

- R. Lanzillotti, "The Great School Milk Conspiracies of the 1980s," *Review of Industrial Organization*, August 1996, pp. 413-458.
- F. Scott, "Great School Milk Conspiracies Revisited," *Review of Industrial Organization*, November 2000, pp. 325-341.



### VIII. HORIZONTAL MARKET STRUCTURE: MERGER POLICY (Week 14)

Tirole, pp. 65-78.

G. Stigler, *The Organization of Industry*, University of Chicago Press, 1968, Ch. 4, "The Measurement of Concentration."

U.S. Department of Justice/Federal Trade Commission, *Horizontal Merger Guidelines*, <http://www.justice.gov/atr/public/guidelines/hmg-2010.html>

### IX. ENTRY, ACCOMODATION, AND EXIT (Week 10-11) (Week 15)

\*Tirole, pp. 305-337.

H. Demsetz, "Barriers to Entry," *American Economic Review*, March 1982, pp. 47-57.

G. Stigler, *The Organization of Industry*, University of Chicago Press, 1968, Ch. 10, "Imperfections in the Capital Market."

W. Baumol, "Contestable Markets, An Uprising in the Theory of Industry Structure," *American Economic Review*, March 1982, pp. 1-15.

D. Fudenberg and J. Tirole, "The Fat Cat Effect, the Puppy Dog Ploy, and the Lean and Hungry Look," *American Economic Review*, May 1984, pp. 361-366.

S. Salop, "Strategic Entry Deterrence," *American Economic Review*, May 1979, pp. 335-338.

A. Dixit, "Recent Developments in Oligopoly Theory," *American Economic Review*, May 1982, pp. 12-17.

T. Bresnahan and P. Reiss, "Entry and Competition in Concentrated Markets," *Journal of Political Economy*, October 1991, pp. 977-1028.

A. Fraas and D. Greer, "Market Structure and Price Collusion: An Empirical Analysis," *The Journal of Industrial Economics*, September 1977, pp. 21-44.

### X. MARKET STRUCTURE AND PERFORMANCE (Week 16)

R. Schmalensee, "Do Markets Differ Much?" *American Economic Review*, June 1985, pp. 341-351.

R. Schmalensee, "Inter-Industry Studies of Structure and Performance," Ch. 16, Vol. 2 of *Handbook of Industrial Organization*.

Textbooks:

Jean Tirole. 1988. *The Theory of Industrial Organization*, MIT Press, One Rogers Street Cambridge MA 02142-1209

R. Schmalensee and R. Willig. 1989. *Handbook of Industrial Organization* (Volumes 1 and 2), Elsevier, North Holland.

D. Carlton and J. Perloff. 2000. *Modern Industrial Organization*. 4th ed., Pearson, Addison Wesley.

Luis Cabral. 2000. *Industrial Organization*, MIT Press. One Rogers Street Cambridge MA 02142-1209

## ECON 856 APPLIED TIME SERIES ANALYSIS

### Course description and Objectives:

Time series data is used in macroeconomics, international finance, and financial economics. The main goal of this course is to equip students with a working knowledge of time series analysis techniques. The course presents analysis of stationary and nonstationary data, unit root and cointegration tests, vector autoregression, and recent development in time series analysis. More emphasis is placed on empirical application and testing rather than pure economic or statistical theory.

### COURSE OUTLINES AND WEEKLY CLASS PLAN

Week	Topics
Week 1-2	Introduction, Stochastic Processes - Stochastic Difference Equations - Lag Operators, Univariate Stationary Time Series Process – Univariate Analysis: Autoregressive (AR) Process, Moving Average (MA) Process, Autoregressive Moving Average (ARMA) Process
Week 3-6	Time series models: Multivariate Analysis Autoregressive Distributed Lag (ARDL) Model, Vector Error Correction (VEC) Model, Vector Autoregressive (VAR) Model, estimation: OLS, ML, Structural VARs Identification
Week 7-8	Unit roots, problem, testing, tests for stationarity
Week 7-9	Cointegration and error correction models, Estimating cointegration relations
	Non-Stationary Time Series Process - Trend-Stationary Series - Difference-Stationary Series
Week 10-14	Models of volatility: ARCH (autoregressive conditionally heteroscedastic) Model – GARCH (generalized autoregressive conditionally heteroscedastic) Model, Maximum Likelihood Estimation of GARCH Models - ARCH-M Model
Week 15-16	Generalized Method of Moments (GMM) - Bayesian Analysis - Change in Regimes

### Reference Books

- Walter Enders, 2010. Applied Econometric Time Series (3rd ed), Wiley.
- G.S. Maddala and I.M. Kim, 1998. Unit Roots, Cointegration, and Structural Change, Cambridge University Press.
- James D. Hamilton, 1994. Time Series Analysis, Princeton University Press.
- Helmut Lutkepohl, 2006. New Introduction to Multiple Time Series Analysis, Springer.
- Fumio Hayashi, 2000. Econometrics, Princeton University Press.

## ECON 857 NONMARKET VALUATION FOR NATURAL RESOURCES

### Course description and Objectives:

This course will explore non-market valuation techniques including CVM and attribute methods, the hedonic method, and the travel cost method. The objective of the course is to impart to students the economic theory behind NMV techniques, the approaches and criticisms, and their use value.

### COURSE OUTLINES AND WEEKLY CLASS PLAN

Week	Topics
Week 1-2	Define the origin and purpose of nonmarket valuation Techniques Critique nonmarket valuation techniques
Week 3-4	Evaluate data collection techniques
Week 5-6	Discuss survey design and implementation using CVM
Week 7-8	Interpret the role of property rights as applied to nonmarket Valuation
Mid Term	
Week 9-10	Evaluate attribute---based methods (ABM) to value nonmarket goods and services
Week 11-13	Assess the merits of revealed preference techniques to evaluate nonmarket values
Week 13-16	Synthesize nonmarket valuation methods

### Required Textbook

- Champ, Patricia A., Kevin J. Boyle and Thomas C. Brown (Eds). 2003. *A Primer on Nonmarket Valuation*. Kluwer Academic Publishers: Boston. 576 pp.
- *Recommended Textbook*
- Mitchell, Robert Cameron and Richard T. Carson. 1989. *Using Surveys to Value Public Goods*. Resources for the Future: Washington, DC. 463 pp.
- Insam Haq, *Environmental evaluations in south Asia* - Blackwell