

Syllabus

Economic theory

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1. Course description:

a) Prerequisites:

The students are expected to be comfortable with plotting graphs of simple functions, interpreting graphs, solving quadratic and linear equations (also systems of linear equations), taking partial derivatives and solving simple unconstrained and constrained maximization/minimization problems.

b) Abstract

Economic theory is a one-module undergraduate course, which combines a brief introduction to the standard methodology of economics with an overview of the essential models of mainstream micro- and macroeconomics. It's intended to give students an overview of the economic models that describe the behavior and interaction of individual consumers and firms, formation of prices in various market structures, and the real-life problems of economic inefficiency caused by market failures as well as macroeconomic issues of aggregate product and national income determination, unemployment, inflation, economic growth and the main instruments and consequences of fiscal and monetary policy.

2. Learning objectives:

"Economic theory" is conceived as a course *of economics*, as opposed to a course *about economics*. Its primary objective is to familiarize the students with the essential toolkit of economic analysis instruments (i.e., formal economic models), and teach them to apply these for answering specific questions about peoples', firms' or governments' decisions about resource allocation.

3. Learning outcomes:

By the end of the course, a successful student is expected to be able to interpret real and hypothetical scenarios in the context of appropriate economic models and make justified forecasts about the behavior of individual economic agents and the outcomes of their interaction using economic intuition, algebraic and graphical analysis.

4. Course plan

Part I: Introducing economics

1. **Introduction to economics.** Definition of economics. Economic goods. Scarcity and choice. Opportunity costs and sunk costs. Economic models. Microeconomics and macroeconomics. Positive and normative economics. (Frank & Bernanke, Ch. 1)

2. **Comparative advantage and exchange.** Comparative advantage. Production possibility frontier. Factors shifting the production possibility frontier. Specialization and exchange of goods. Comparative advantage and international trade. Economic systems: market economy, command economy, mixed economy. (Frank & Bernanke, Ch. 2)

Part II. The perfectly competitive market model

3. **Introducing the competitive market model.** Demand curve and its determinants. Supply curve and its determinants. Equilibrium and efficiency. Producer surplus and consumer surplus. Own-price elasticity of demand and its determinants. Own-price elasticity of demand and total revenue. Cross-price elasticity of demand: substitutes and complements. Income elasticity of demand: normal and inferior goods. Own-price elasticity of supply. Frank & Bernanke, Ch. 3, P & R, Ch 2.
4. **Effects of government regulation in competitive markets.** Price controls, excess demand and excess supply. Quotas. Price supports. Taxes and subsidies. Elasticities and tax incidence. Frank & Bernanke, Ch. 3, P & R, Ch 2.

Part III. Producer theory.

5. **Technology.** Inputs and outputs. Production functions. Examples: fixed proportions, perfect substitutes, Cobb-Douglas. Marginal product. The long run and the short run. Returns to scale. P & R, Ch 6.
6. **Profit maximization.** Accounting profit and economic profit. Profits and stock market value. Short-run profit maximization. Comparative statics. Profit maximization in the long run. Inverse factor demand curves. Profit maximization and returns to scale. P & R, Ch 6.
7. **Cost minimization.** Short-run and long-run cost functions. Fixed and quasi-fixed costs. Returns to scale and economies of scale. Average, average variable and marginal costs. Interrelations between short-run marginal costs, average variable costs and labor productivity. Interrelations between short-run and long run cost curves. P & R, Ch 7.
8. **Firm and industry supply.** The supply decision of a competitive firm in the short run and in the long run. Profits and producer's surplus. Short-run industry supply. Short-run competitive equilibrium. P & R, Ch 8.

Part IV. Market structures.

9. **Perfect competition.** Short-run and long-run competitive equilibrium. The long-run industry supply curve. Forms and welfare consequences of government regulation. Elasticity and tax incidence. Application: the labor market. Human capital and signalling theories. P & R, Ch 9.
10. **Monopoly.** Profit maximization under monopoly. Comparison with perfect competition: output and price. Social cost of a monopoly. Natural monopolies. Regulation of natural monopolies. 1st, 2nd and 3rd degree price discrimination. Two-part tariffs. P & R, Ch 10-11.
11. **Monopolistic competition and oligopoly.** Features of monopolistic competition. Comparison with perfect competition: output and price. Advertising. Features of

oligopoly. Elements of game theory: players, actions, strategies. Nash equilibrium. Prisoner's dilemma. The Cournot and Bertrand models. Price wars and collusion. Cartels. Barriers to entry. FB, Ch. 9; P & R, Ch 12.

Part V. Market failures.

12. **Externalities and public goods.** Externalities. Property rights and transaction costs: the Coase Theorem. Tragedy of the commons. Public goods. Private provision of the public good: the free-rider problem. P & R, Ch 18.
13. **Asymmetric information.** The market for lemons. Adverse selection. Moral hazard. Signalling. P & R, Ch 17.

Part VI. Macroeconomics: the short run

14. **Introducing macroeconomics.** Subject of macroeconomics. Aggregation: macroeconomic agents and macroeconomic markets. The key macroeconomic questions. The circular flow model. Measuring aggregate output – introducing GDP. A first look at inflation and unemployment: Okun's law and the Phillips curve. BJ, ch. 1, 2.
15. **Short-run: the goods market.** Components of aggregate demand. Short-run model of input determination. Equilibrium: planned expenditures and actual expenditures, investment and saving. The “Keynesian cross model”. The multiplier effect. «Paradox of Thrift». BJ, ch. 3.
16. **Short run: the money market.** Kinds of money: monetary supply aggregates. Demand for money. Financial intermediaries: the banking system. Central bank and its functions. Banks as creators of money: deposit and loan multipliers. Monetary base, money multiplier and money supply. Money market equilibrium: interest rates and bond prices. BJ, Ch. 4.
17. **The IS-LM model.** Goods market and the IS relation. Money market and the LM relation. General macroeconomic equilibrium: IS-LM. Dynamics of adjustment. BJ, Ch. 5.
18. **Introducing the open economy.** Choice between the domestic and foreign goods/assets – the nominal and real exchange rates. Balance of payments: current and capital account. BJ, Ch. 18.
19. **Goods market equilibrium in an open economy.** The IS relation in the open economy. Determinants of imports and exports. Equilibrium output and trade balance. Reaction to changes in domestic/foreign demand. BJ, Ch. 19.
20. **Output, interest rate and exchange rate.** Investing at home versus investing abroad. Fiscal and monetary policies in an open economy. The fixed exchange rate VS a flexible exchange rate regime. BJ, Ch. 20.

Part VII. Macroeconomics: the medium run

21. **The labour market.** Specific features of Russian labour market. Types and causes of unemployment. Modelling the aggregate labor market: unemployment and wage determination. The natural rate of unemployment. BJ, Ch. 6.
22. **Aggregate demand and aggregate supply.** Aggregate supply: the labor market equilibrium. Aggregate demand: equilibria in the goods and money markets. Short- and medium-run equilibria. Effects of discretionary fiscal and monetary policies. BJ, Ch. 7.
23. **Unemployment and inflation: NAIRU and the Phillips curve.** Deriving the Phillips curve from the AS relation. Trade-offs between inflation and unemployment: the short-run Phillips curve. Mutations of the Phillips curve. Natural rate hypothesis and the long-run Phillips curve. Phillips curve under high levels of inflation. BJ, Ch. 8.

Part VIII. Macroeconomics: the long run

24. **The facts of economic growth.** Measuring the standard of living. Aggregate production function. Sources of economic growth: labour productivity, capital accumulation and technological progress. Is there any convergence? BJ, Ch. 10.
25. **Saving, capital accumulation and output.** Capital and output dynamics. The steady state. Saving rate and consumption. The Golden Rule. Adding human capital to the picture. Endogenous growth. BJ, Ch. 11.
26. **Technological progress and growth.** Steady state and the rate of technological progress. Determinants of technological progress. Stylized facts of growth: a revision. BJ, Ch. 12.

5. Reading list

a. Required:

1. Pindyck R. S., Rubinfeld D. L. Microeconomics. (7th or later edition). – 2001. The chapters from the book covered in the course are indicated in the Course Outline as P&R, Ch #.
2. Giavazzi F., Amighini A., Blanchard O. J. B. Macroeconomics: A European Perspective. – Financial Times Prentice Hall, 2010 (or later editions). The chapters from the book covered in the course are indicated in the Course Outline as B, Ch #.

b. Optional:

1. McDowell M. et al. Principles of economics. – McGraw-Hill, 2009 (or later editions).
2. Вэриан Х. Р. Микроэкономика. Промежуточный уровень. Современный подход. – М. : Юнити, 1997.
3. Бланшар, О. Макроэкономика. М.: Издательство ВШЭ, 2010.

4. Lazear E. P. Economic imperialism //The Quarterly Journal of Economics. – 2000. – T. 115. – №. 1. – P. 99-146 – URL: <https://proxylibrary.hse.ru:2066/stable/2586936>, – ЭБС: JSTOR

6. Grading system

Students' final grade for this course will be determined by their average score for the in-class quizzes (40%) and the end-of-module exam (60%).

There will be no make-ups for missed quizzes. But, if a quiz has been missed for an objective, documentally verified reason registered with the study office, its weight in the final grade will be transferred to other quizzes this student has written.

In-class quizzes require students to answer short (typically, maximal time allowed is 5 minutes) questions dealing with the contents of the preceding lecture.

Examples of quiz questions:

- (i) Suppose the price of bread went up by 50%. Illustrate the likely consequences of this for the equilibrium quantity and price of butter, assuming butter market is perfectly competitive. Provide verbal comments for your answer, using relevant economic concepts.
- (ii) Consider a following statement: "If per-unit taxes implemented on perfectly competitive markets always diminish social welfare, then per-unit subsidies implemented on same markets must surely increase it!". Use graphical analysis to prove, or falsify this statement.
- (iii) Within the framework of the IS-LM model, explain, how can a \$1 increase in government spending generate more-than-\$1 increase in a country's GDP?
- (iv) Consider a following statement: "Saving and investing more (all else equal) always leads to higher values of GDP in later years. Therefore, higher saving rates will always allow people to enjoy better future standards of living." Within the framework of the classical Solow's growth model, would you agree or disagree with it? Why?

7. Examination type

The final exam is a written assignment usually comprising 6-8 free-response questions, checking a student's command of economic terminology, basic economic models, and his ability of intuitive economic reasoning, graphical analysis, and using algebra to give answers to questions about decisions that households, firms and governments make about allocating scarce resources. Typically, the final exam is *open-book* (i.e., students can use any written or printed material of their choice). That warrants for questions that lie *beyond* definitions, formulas or typical exercises done in class. As a result, naive attempts to reproduce what was done in class typically don't bring a lot of points.

A sample final exam paper:

1. Consider a firm operating in a perfectly competitive market with a short-run cost function of $c(q) = 16 + q^2$.
 - a) Derive the expressions for, and plot the average, average variable and marginal costs curves.

- b) Identify the minimum output price, that will allow the firm to break even (i.e., to make zero profit).
- c) If the market price is equal to 2, how much will this firm produce in the short run? Explain, and back your answer up with calculations.
2. Consider a perfectly competitive market for butter, where market demand is given by $D(P) = 100 - P$ and market supply is $S(P) = P$.
- a) Find the equilibrium price and quantity of butter. Illustrate your answer with a supply/demand diagram.
- b) Suppose the government introduces a price ceiling of \$20 per unit of this good. Find the equilibrium quantity of butter after the price ceiling and calculate the amount of social losses from this policy.
3. Suppose that market for dry-cleaning services is perfectly competitive, with linear market demand/supply curves, and that each unit of dry-cleaning services imposes the same constant marginal external cost to society.
- a) Using a MPB/MSB/MPC/MSC diagram, illustrate the equilibrium quantity of dry-cleaning services and the socially optimal quantity of dry-cleaning services.
- b) Suppose the government wants to bring the equilibrium quantity of dry-cleaning services to the socially optimal level by introducing a price floor. What is the level at which this price floor should be set? Illustrate on your graph from (a).
4. Suppose that the government spends an extra \$5 billion on police cars. Explain, why can aggregate demand for goods and services increase by more than \$5 billion, for the same price level. Explain, why can aggregate demand for goods and services increase by less than \$5 billion, for the same price level.
5. Consider an economy described by the following behavioral equations:
 $C = 500 + 0,5(Y - T)$, $I = 200 + 0,25Y - 1000i$, $G = 400$, $T = 200$, $M = 6000$, $P = 3$
- a) Derive the IS equation. Derive the LM equation.
- b) What are the equilibrium levels of output and interest rate?
- b) The central bank wants to adjust money supply to raise the output level to 3000. Compute the required change in money supply.
6. Consider the standard Solow growth model with no technological progress and no population or employment growth. Suppose the economy is now in its steady state.
- a) What are the steady-state growth rates of capital-per worker and output per worker? What is the steady-state growth rate of output? Explain.
- b) Suppose that an earthquake destroys part of the country's capital, but (luckily) doesn't affect the size of its labor force or unemployment rate. How will the amount of output-per-worker change over time? Explain and illustrate graphically.

8. Methods of instruction

These include:

- lectures (some of these will be video-lectures);
- classes (problem-solving sessions);
- short quizzes, written at the start of each class, checked and marked by the class teacher and discussed in detail in class;
- classteacher's consultations;

- self-study;
- a final written exam at the end of the third module;

self-study is a very important component of success in the course.

9. Special equipment and software support

The course requires no special equipment/software beyond Internet access.