Microeconomics

Contact Details

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Pre-requisites

There are two types of prerequisites, both of which are essential. The first type is that students must have completed Introductory Economics, as well as Game Theory, Economic History, and History of Economic Thought (partially). So, it is assumed that students already have some familiarity with production functions, utility, demand and supply curves, the operation of the market and the nature of equilibrium.
The second one is Calculus. It is assumed that students know the basics of differential calculus, optimization theory, and probability theory studied in Mathematical Analysis, Linear Algebra, Methods of Optimal Solutions, and Probability Theory and Mathematical Statistics.

Abstract

The compulsory course is taught to the undergraduate students. The learning goals for this course include: familiarizing students with basic concepts of the microeconomic theory, development skills of formal analysis of economic processes and phenomena at the micro level using models of the behavior of economic agents (consumers, firms, government), and using economic theory to understand and evaluate policy proposals. Main topics covered include Budget Constraint, Preferences and Utility; Utility Maximization and Choice; Income and Substitution Effects; Demand Elasticities; Consumer Surplus, Compensating and Equivalent Variations; Revealed Preference; Production Functions; Cost Functions; Profit Maximization; Partial Equilibrium Competitive Model; General Equilibrium and Welfare; Monopoly; Oligopoly and Imperfect Competition; Intertemporal Choice and Pricing in Asset Markets; Choice under Uncertainty; Asymmetric Information; Externalities and Public Goods. It is assumed that students know the basics of differential calculus, optimization theory, and probability theory studied before. Evaluation activities consist of three control works, mid-term exam, and final exam.

Learning objectives

The course aims to:

- make the students familiar with the basic concepts of the microeconomic theory
- develop students' knowledge of economic terminology and theory
- encourage the students to make economic arguments and pursue economic research
- develop the students' skills of formal analysis of economic processes and phenomena at the micro level using models of the behavior of economic agents (consumers, firms, government)
- enable students' ability to use economic theory to explain and predict economic phenomena
- help the students to useeconomic theory to understand and evaluate policy proposals
- provide students with the analytic tool they need for the rest of the bachelor program

Learning outcomes

On completion of the course student will be able to:

- formulate basic theories and models of microeconomics

- define and graph two-dimensional production functions, budget constraints, indifference curves, production possibility frontiers, etc.
- demonstrate the effects of changes in prices or income on quantity demanded, and changes in price on quantity supplied, and illustrate these effects graphically and explain them in words
- interpret price and income changes in the decision of individual agents as well as to understand the concept of (Nash) equilibria as mutually best responses in strategic settings
- apply the various general equilibrium and trade theorems in order to predict the consequences of policy changes
- define Pareto optimality
- differ sequential and simultaneous games, and define Nash equilibrium
- explain economic outcomes using the basic theories of risk, externalities, public goods, and oligopoly
- use a Lagrange method, solve the system of first-order conditions to get a solution to a model, and analyze properties of the solution
- know the behavioral assumptions economics makes about consumers and firms, i.e. consumers behave so as to maximize their utility and firms behave so as to maximize their profit

Grading System

There are three components to course grade.

Control works. There will be three in-class control works. Each one will last 80 minutes.Control works will be comprehensive on the material covered up to that point.

Mid-term exam.

Final exam. There will be closed-book final exam. Final exam will be comprehensive, covering all material in the course.

$$O_{summary} = 0{,}6*O_{cumulative\ final} + 0{,}4*O_{final\ exam}$$

$$O_{cumulativefinal} = (O_{midterm1} + O_{cumulative2}):2$$

$$O_{midterm1} = 0{,}6*O_{cumulative1} + 0{,}4*O_{midterm\ exam}$$

$$O_{cumulative1} = 0{,}5*O_{control\ work1} + 0{,}5*O_{control\ work2}$$

$$O_{cumulative2} = O_{control\ work3}$$

The maximum number of points that can be achieved for this course is 10.

Guidelines for Knowledge Assessment

The first control work will cover consumer and producer theory, specifically the utility maximization, expenditure minimization, profit maximization, and cost minimization problems.

The second control work will cover general equilibrium, monopoly, oligopoly, choice under uncertainty, public goods, externality, and information asymmetry problems.

The mid-term exam will test the student's knowledge of topics covered in the courseup to that point.

The thirdcontrol work will cover factor demand, factor supply and factor market equilibrium problems.

The final exam will test the student's knowledge of all topics covered in the course. The final will be cumulative, and the student is expected to have mastered the material by the end of the course.

The assessment criteria for the control works, mid-term and final exams are:

- detailed solution that includes all the necessary formulas and calculations

- graphs illustrating the problem with all the symbols
- correct choice of the model for analysis
- correct answer
- interpretation of the results

Course Plan

#	Topic	Total	Classroomhours		Self-study
			Lectures	Seminars	
1	Budget Constraint, Preferences and Utility	14	2	4	8
2	Utility Maximization and Choice	14	2	4	8
3	Income and Substitution Effects	14	2	4	8
4	Demand Elasticities	10	2	2	6
5	Consumer Surplus, Compensating and Equivalent Variations	10	2	2	6
6	Revealed Preference	10	2	2	6
7	Production Functions	14	2	4	8
8	Cost Functions	14	2	4	8
9	Profit Maximization	10	2	2	6
10	Partial Equilibrium Competitive Model	14	2	4	8
11	General Equilibrium and Welfare	18	2	6	10
12	Monopoly	14	2	4	8
13	Oligopoly and Imperfect Competition	18	2	6	10
14	Intertemporal Choice and Pricing in Asset Markets	14	2	4	8
15	Choice under Uncertainty	14	2	4	8
16	Asymmetric Information	9	1	2	6
17	Externalities and Public Goods	17	1	6	10
	1st year	228	32	64	132
18	Factor Demand	24	2	4	18
19	Factor Supply	24	2	4	18
20	Factor Market Equilibrium	28	4	4	20
	2nd year	76	8	12	56
Total		304	40	76	188

1. Budget Constraint, Preferences and Utility
Budget constraint. Non-linear budget constraints. Budget constraint with endowment. Assumptions about preferences. Ordinal preferences. Utility. Indifference curves and marginal rate of substitution. MRS and marginal utility. Utility functions for specific preferences: Cobb-Douglas utility, perfect substitutes, perfect complements, CES utility, quasilinear preferences, Stone-Geary utility. Homothetic preferences.

Reading: [V, ch 2-4; B, гл 2-4], [ЧФ, гл 1, 1.1-1.4], [C, ch 4, 4.1-4.4; K, гл4, 4.1-4.4], [JR, ch1, 1.1-1.2; ДР, гл 1, 1.1-1.2]

2. Utility Maximization and Choice
Lagrange multipliers method. First-order conditions. Second-order conditions. Interior and corner solutions. Demand functions.
Duality. Indirect utility function. Expenditure minimization. Properties of expenditure functions.

Reading: [V, ch 5-6; B, гл 5-6], [ЧФ, гл 1, 1.5; гл 7, 7.1-7.3], [C, ch 4, 4.5; K, гл 4, 4.5], [JR, ch 1, 1.3-1.5, ch 2, 2.1; ДР, гл 1, 1.3-1.5, гл 2, 2.1]

3. Income and Substitution Effects
Demand functions and homogeneity.
Changes in income. Normal and inferior goods.
Changes in a good's price. Ordinary goods and Giffen goods. Income and substitution effects.
Individual's demand curve. Marshallian and Hicksian (compensated) demand curves. Roy's identity. Shephard's lemma. Slutsky equation and decomposition of price effect.

Reading: [V, ch 8; B, гл8], [ЧФ, гл 2-3; гл 7, 7.3-7.4], [C, ch 4, 4.5; K, гл 4, 4.5], [JR, ch 1, 1.5; ДР, гл 1, 1.5]

4. Demand Elasticities
Marshallian demand elasticities. Compensated price elasticities. Homogeneity of demand functions in elasticity terms. Engel aggregation. Cournot aggregation. Constant elasticity demands. Inverse demand function.

Reading: [V, ch 15; B, гл 15, 15.5-15.11], [ЧФ, гл 6], [JR, ch 1.5, 1.5.3; ДР, гл 1, 1.5, 1.5.3]

5. Consumer Surplus, Compensating and Equivalent Variations
Consumer surplus. Welfare changes and Marshallian demand curve. Consumer welfare and expenditure function. Compensated demand curve. Compensating and equivalent variations.

Reading: [V, ch 14; B, гл 14], [ЧФ, гл 4], [C, ch 4, 4.6; K, гл 4, 4.6], [JR, ch 1, 1.4; ДР, гл 1, 1.4]

6. Revealed Preference
Recovering preferences. Revealed preference and negativity of substitution effect. Strong and weak axioms of revealed preference. Index numbers. Price indices.

Reading: [V, ch 7; B, гл7], [ЧФ, гл 5], [C, ch 4, 4.3, 4.6.1; K, гл 4, 4.3, 4.6.1], [JR, ch 2, 2.3; ДР, гл 2, 2.3]

7.Production Functions
Marginal productivity. Isoquant maps and the rate of technical substitution. Returns to scale. Homothetic production functions. Elasticity of substitution. Simple production functions: fixed proportions, perfect substitutes, Cobb-Douglas, CES.
Technical progress.

Reading: [V, ch 18; B, гл 17], [ЧФ, гл 8], [C, ch 2, 2.1; K, гл 2, 2.1], [JR, ch 3, 3.1-3.2; ДР, гл 3, 3.1-3.2]

8.Cost Functions
Economic costs. Economic profits and cost minimization. Cost-minimizing input choices. Conditional factor demands. Cost functions. Cost functions and shifts in cost curves. Shephard's lemma and elasticity of substitution. Long-run and short-run costs.

Reading: [V, ch 20-21; B, гл 19-20], [ЧФ, гл 9], [C, ch 2, 2.2, 2.4; K, гл 2, 2.2, 2.4], [JR, ch 3, 3.3-3.4; ДР, гл 3, 3.3-3.4]

9.Profit Maximization

Profit maximization. Marginal revenue. Short-run supply by price-taking firm. Profit functions. Hotelling's lemma. Producer surplus in short run. Profit maximization and input demand.

Reading: [V, ch 19, 22; B, гл 18, 21], [ЧФ, гл 10], [C, ch 2, 2.2, 2.4; K, гл 2, 2.2, 2.4], [JR, ch 3, 3.5; ДР, гл 3, 3.5]

10.Partial Equilibrium Competitive Model
Market demand. Construction of market demand curve from individual demand curves. Elasticity of market demand.
Short-run industry supply. Market equilibrium in short-run. Short-run price determination.
Industry equilibrium in long-run.Long-run supply curve.
Producer surplus in long-run. Economic rent. Rental rates and prices.
Economic efficiency and welfare analysis. Price controls and shortages. Tax incidence analysis. Trade restrictions.

Reading: [V, ch 15-16, 23; B, гл 15-16; гл 22], [ЧФ, гл 11; гл 13], [C, ch 3; ch 5, 5.1-5.2, 5.5-5.6; K, гл 3; гл 5, 5.1-5.2, 5.5-5.6], [JR, ch 4, 4.1; ДР, гл 4, 4.1]

11. General Equilibrium and Welfare
Edgeworth box and model of general equilibrium in exchange economy. Pareto efficient allocations and contract curve.
Edgeworth box for production. Production possibility frontier. Rate of product transformation.
Determination of equilibrium prices.
Existence of general equilibrium prices. Excess demand functions and Walras' Law.
Welfare Economics. Competitive Prices and Efficiency: The First Theorem of Welfare Economics. The Second Theorem of Welfare Economics.

Reading: [V, ch 31-32; B, гл 28-29], [ЧФ, гл 24-25], [C, ch 6-7; K, гл 6-7], [JR, ch 5; ДР, гл 5]

12. Monopoly
Monopoly: profit maximization, output choice and price determination.
Monopoly and resource allocation. Deadweight loss from monopoly.
Price Discrimination. Perfect price discrimination. Second-degree price discrimination: two-part tariff. Third-degree price discrimination: market separation.
Regulation of natural monopolies. Marginal cost pricing dilemma. Two-tier pricing systems. Rate of return regulation and Averch-Johnson effect.

Reading: [V, ch 24-25; B, гл 23-24], [ЧФ, гл14], [C, ch 3, 3.6; K, гл 3, 3.6], [ДР, гл 4, 4.2]

13. Oligopoly and Imperfect Competition
Simultaneous quantity setting. Cournot model. Nash-Cournot equilibrium.
Quantity leadership. Stackelberg model.
Simultaneous price setting. Bertrand model. Bertrand paradox. Capacity constraints. Nash-Bertrand equilibrium with differentiated products.
Price leadership.
Collusion.

Reading: [V, ch 27-29; B, гл 26-27], [ЧФ, гл 17], [C, ch 10, 10.4, 10.6; K, гл 10, 10.4, 10.6], [JR, ch 4, 4.2; ДР, гл 4, 4.2]

14. Intertemporal Choice and Pricing in Asset Markets

Budget constraint and preferences for consumption over time. Slutsky equation and intertemporal choice.
Capital and the rate of return.
Firm's demand for capital
Present discounted value approach to investment decisions
Natural resource pricing.

Reading: [V, ch 10-11; B, гл 10-11], [ЧФ, гл 19]

15. Choice under Uncertainty
Fair Games and expected utility hypothesis.
von Neumann–Morgenstern theorem.
Risk aversion. Measuring risk aversion.
Portfolio problem.
State-Preference approach to choice under uncertainty. States of the world and contingent commodities.

Reading: [V, ch 12-13; B, гл 12-13], [ЧФ, гл 20], [C, ch 8; K, гл 8], [JR, ch 2, 2.4, ch 5, 5.4; ДР, гл 2, 2.4]

16. Asymmetric Information
The Market for lemons.
Quality choice. Choosing the quality.
Principal-Agent model. Moral hazard model (hidden-action model). Adverse selection model (hidden-type model). First best (full-information case). Second best (hidden-action case).
Moral hazard in insurance. Adverse selection in insurance.
Market signaling.
Auctions.

Reading: [V, ch 37; B, гл 35], [ЧФ, гл 29], [C, ch 11; K, гл 11], [JR, ch 2, 2.4, ch8; ДР, гл 8]

17. Externalities and Public Goods
Inefficiency of competition with externalities. Regulating externalities.
Allocating property rights. Coase theorem.
Public goods. Club goods. Public goods provision.
Lindahl pricing of public goods.
Voting and resource allocation. Voting mechanisms. Vickrey-Clarke-Groves mechanism.

Reading: [V, ch 34, 36; B, гл 31; гл 34], [ЧФ, гл 27-28], [C, ch 13; K, гл 13], [JR, ch 9, 9.5]

18. Factor Demand
Profit maximization and derived factor demand functions. Physical products and revenue products. Substitution and output effects on labor demand. Factor demand in the short run. The firm's factor demand in the long run. Industry demand for labor. Influences on the elasticity of factor demand. Factor payments, the value of output and the Euler theorem.

Reading: [V, ch 19, 26; B, гл 18; гл 25], [ЧФ, гл 21]

19. Factor Supply
Consumption-leisure model and individual's supply of labor. Backward bending supply curve of labor.
Variations in the wage rate. Overtime payments. The effect of fixing the length of the working week.

Reading: [V, ch 26; B, гл 25], [ЧФ, гл 22]

20. Factor Market Equilibrium
Economic rent. Land rent.
Factor demand under monopoly.
Monopsony. Discriminating monopsony
Labor unions.
Upstream and downstream monopolies. Bilateral monopoly and bargaining.

Reading: [V, ch 26; B, гл 25], [ЧФ, гл 23]

Methods of Instruction

Hal Varian's textbook [1] is required. Although the course of microeconomics at universities is highly standardize various intermediate level textbooks have a different structure, logic and sequence of presentation. The content of textbook by Chekanskij and Frolova [2] has no fundamental differences from [1], but it includes additional chapters and sections. For example, there is a chapter devoted to the problem of duality in consumer choice theory.

The advanced level textbooks by Frank Cowell [3], and Geoffrey Jehle and Philip Reny [4] are optional. It is recommended especially for those who choose to further concentration "Applied Economics" and plan to continue their study on Master's program. The mathematical tools necessary for solving complex problems are presented in mathematical appendixes to [3], and [4]. It provide students with a lengthy and largely self-contained development of the set theory, real analysis, calculus, optimization theory, etc. For example, there are expositions of set in$\mathbb{R}_+^n$, homogeneous and homothetic functions, implicit functions, convex sets, convex and concave functions, Hessian matrix, envelope theorem, Lagrangian and Kuhn-Tucker methods.

Textbooks and course materials are complementing each other. In the limited class time, there is no possibility to cover everything useful, so this makes textbooks a good companion with which students can solidify understandings of lecture notes. It always helps if students read textbooks carefully before and after each lecture, because doing so will let them quickly find out where they don't understand and what their questions are during the lecture and seminar.

PowerPoint slides for each topic of the course provide a thorough set of outlines for classroom use or for students as a study aid. StudentsmaydownloadtheseslidesfromtheLMSpage.

To execute the written homework and prepare for mid-term and final exams students are encouraged to solve similar problems considered for seminars, and explore examples of solutions available in the Solution Manuals [5] - [9].

Students who have difficulty with the understanding of lectures in English can use the free online course materials (for example, there is Principles of Microeconomics by Jonathan Gruber, MIT OpenCourseWare), or even enroll Introductory Microeconomics at Coursera and other massive open online course (MOOC).

Sample questions and problems

Demo version of mid-term exam 1

1. Suppose a person has CES utility function $u(x_1, x_2) = (x_1^\rho + x_2^\rho)^{1/\rho}$.

(a) Show that there is a positive monotonic transformation such that there is an equivalent utility function $u(x_1, x_2) = x_1^\rho + x_2^\rho$

(b) Again: a person has CES utility function $u(x_1, x_2) = (x_1^\rho + x_2^\rho)^{1/\rho}$, where $\rho \neq 0$ and $\rho \leq 1$. Solve for the optimal x_1 and x_2 in terms of his income and the prices of the two goods.
(c) What are the optimal x_1 and x_2 for a consumer with CES utility function $u(x_1, x_2) = x_1^\rho + x_2^\rho$?
(d) Derive his demand curve for x_1.
(e) Derive his Engel curve.
(f) Derive his compensated (Hicksian) demand and expenditure functions.
(g) The prices of the two goods are $p_1 = 2$ and $p_2 = 1$, consumer's income is m = 16. In the graph with the indifference curves and the budget set mark the optimal choice.
(h) Suppose the price of good 1 changes to $p_1 = 1$. Find new optimal choice. Decompose the change of consumption x_1 into an income and substitution effect. Use the Slutsky equation.
(i) Compute and compare the welfare effects of price changes for good 1 in terms of consumer surplus (ΔCS) as well as compensating and equivalent variation (CV and EV). Use the compensated demand function for CV and EV.

2.Suppose a firm has the Cobb-Douglas production function $y = K^\alpha L^\beta$, where K and L are inputs, y is output and α, β are positive parameters.
(a) What is the elasticity of substitution?
(b) Using the Lagrange method find the cost-minimizing values of the inputs and the cost function.
(c) Under what circumstances will the production function exhibit decreasing, constant and increasing returns to scale? Explain this using first the production function and then the cost function.
(d) Find the conditional demand curve for K.

3.Foreign company is considering building a new car factory in a country. The total (fixed) cost of the investment is F = 4 (in billions of dollars). When built, the factory will allow to produce y cars at the (variable) cost given by $c(y) = 4y^2$. Suppose the car industry is regulated (companies must have licences to sell on the market) and before foreign company entry, there are already two firms operating in a country. They are all identical to foreign company.
(a) Find individual supply of foreign company, assuming that it has a licence and builds the third factory.
(b) Find aggregate supply of the car industry in a country, assuming that foreign company has a licence and builds the third factory.
(c) Suppose the aggregate demand for cars in a country is $D(p) = 8 - \frac{1}{8}p$. Find the equilibrium price, individual and aggregate level of production and the level of individual profit.
(d) How much (maximally) foreign company is willing to pay for the licence to enter the market?
(e) Suppose now the government liberalizes the car industry, so that no license is required anymore, i.e. we have free entry. Predict the number of firms producing cars, the level of production, the price of a car and the level of profit by each firm.
(f) For which values of F should we observe monopoly, oligopoly or nearly perfectly competitive car industry?

Demo version of mid-term exam 2

1.The two agents, *A* and *B*, in a two-commodity exchange economy have utility functions $u^A = \log x_1^A + 2\log x_2^A$ and $u^B = 2\log x_1^B + \log x_2^B$. Their initial endowment are $\omega^A = (9;3)$ and $\omega^B = (12;6)$.

(a) Obtain the excess demand function for each good and verify that Walras' Law is true.
(b) Find the equilibrium price ratio.
(c) What is the equilibrium allocation?
(d) Derive the contract curve.

2.Consider a duopoly with identical firms. The cost functions for firms are $q_1 = F + cq_1$ and $q_2 = F + cq_2$. The inverse demand function is $p = a - bq$. *F*, *c*, *a* and *b* are all positive numbers and total output is given by $q = q_1 + q_2$.

(a) Find the isoprofit contour and the reaction function for both firms. Find the Cournot-Nash equilibrium for the industry and illustrate it in the graph.
(b) Find the joint-profit maximising solution for the industry and illustrate it on the same graph.
(c) If firm 1 acts as leader and firm 2 as a follower find the Stackelberg solution.
(d) Draw the set of payoff possibilities and plot the payoffs for cases (a) – (c) and for the case where there is a monopoly.

3 Two agents, *A* and *B*, have expected utility functions $u^A = \sqrt{w}$ and $u^B = \ln w$. Agent *A* initially has a wealth of \$4. He has a lottery ticket that will be worth \$14 with probability 0,5 and will be worth \$0 with probability 0,5. Agent *B*' friend who is fond of gambling offers him the opportunity to bet on the flip of a coin that has probability π of coming up heads. If he bets \$*x* ($x \geq 0$), he will have $w + x$ if head comes up and $w - x$ if tails comes up.

(a) Show that the agents are risk-averse (or not).
(b) What is expected utility of *A*? What is the lowest price *p* he is willing to accept to sell his ticket?
(c) What is expected utility of *B*?
(d) Solve for the optimal x^*as a function of π. Discuss the qualitative features of the solution.

4. Suppose that choleric people (*ch*) are more prone to injury than phlegmatic one (*ph*). Choleric have an 80% chance of suffering an injury leading to a \$1000 loss (in terms of medical expenses and the monetary equivalent of pain and suffering) but phlegmatic have only a 20% chance of suffering such an injury. Suppose the population contains equal numbers of choleric and phlegmatic (in more advanced version of problem we can suggest that there are four fundamental personality types, sanguine, choleric, melancholic, and phlegmatic). All of them have logarithmic utility-of-wealth functions and initial wealth of \$10000. Insurance is provided by a monopoly company.

(a) Compute the first best for the monopoly insurer (i.e., supposing it can observe the individual's temperament type).
(b) Take as given that, in the second best, the monopolist prefers not to serve phlegmatic at all and targets only choleric. Knowing this, compute the second-best menu of policies for the monopoly insurer.
(c) Solve numerically the constrained optimization problem for the second best. Make sure to add constraints bounding the insurance payments for righties: $0 \leq x_{ph} \leq 1000$. Establish that the constraint $0 \leq x_{ph}$ is binding and so phlegmatic are not served in the second best. You can use Excel or other software tool to do.

(d) Now assume that insurance is offered by competitive insurers who cannot distinguish choleric from phlegmatic and so offer a single contract. If both types are equally likely to buy insurance, what would be the actuarially fair premium for full insurance?
(e) Which types will buy insurance at the premium calculated in (d)?
(f) Given your results from part (e), will the insurance premiums be correctly computed?

Reading List

Required

1. *Varian H.R.*(2014) Intermediate microeconomics: a modern approach. 9thed. NewYork: W.W. Norton&Co.**[V]**
   Russianedition: *Вэриан Х.Р.* Микроэкономика: промежуточный уровень. М.: Юнити, 1997. – 767 с.**[В]**

Optional

2. *Чеканский А.Н., Фролова Н.Л.*Микроэкономика. Промежуточный уровень. М.: Инфра-М, 2008. – 685 с. **[ЧФ]**
3. *Cowell F.A.* (2006) Microeconomics: principles and analysis. Oxford; New York: Oxford University Press.**[C]**
   Russianedition: *Коуэлл Ф*. Микроэкономика: принципы и анализ. М.: Дело, 2011. – 720 с.**[К]**
4. *JehleG.A., RenyP.J.*(2011) Advancedmicroeconomictheory. 3rded. Harlow, England; NewYork: FinancialTimes/PrenticeHall.**[JR]**
   Russian edition:*ДжейлиДж.А., РениФ.Дж.* Микроэкономика: продвинутыйуровень. М.: Изд. домГУ-ВШЭ, 2011. – 733 с.**[ДР]**

Solution Manuals, Textbook Solutions

5. *Балакина Т.П., Левина Е.А., Покатович Е.В., Попова Е.В.* Микроэкономика: промежуточный уровень. Сборник задач с решениями и ответами. М.: Изд. дом Высшей школы экономики, 2013. – 503 с.
6. *Левина Е.А., Покатович Е.В.* Микроэкономика: задачи и решения. М.: Изд. дом ГУ ВШЭ, 2008. – 492 с.
7. *Киреев А.П., Киреев П.А*. Микроэкономика для продвинутых: задачи и решения. М.: ИНФРА-М, 2010. – 160 с.
8. *Ватник П.А., Заостровцев А.П.* Микроэкономика: В 3-х т. Т. 3. Сборник задач /. СПб.: Экономическая школа ГУ-ВШЭ. 2007. – 160 с.
9. *Розанова Н.М.* Микроэкономика. Задачи и упражнения. М.: ЮНИТИ-ДАНА, 2010. – 559 с.

Special Equipment and Software Support

SoftwareTools

Advanced Grapher is a powerful graphing software. You can use it to plot graphs of equations, inequalities and tables.Features are plotting of up to 100 graphs on one coordinate plane (in one document) and supports graphing of the different graph types.
Microsoft Mathematics provides a graphing calculator that plots in 2D and 3D, step-by-step equation solving, and useful tools to help students with math and science studies.
Microsoft Mathematics Add-in for Microsoft Word and Microsoft OneNote makes it easy to plot graphs in 2D and 3D, solve equations or inequalities, and simplify algebraic expressions in your Word documents and OneNote notebooks.
Wolfram|Alpha introduces a fundamentally new way to get knowledge and answers — not by searching the web, but by doing dynamic computations based on a vast collection of built-in data, algorithms, and methods.

Spreadsheet Applications

Barreto H. Intermediate Microeconomics with Microsoft Excel. Cambridge University Press, 2009. http://www.depauw.edu/learn/microexcel
Website for textbook that integrates automated Excel spreadsheets with textbook content

Mark Walbert's Workbooks for Intermediate Microeconomics.
http://my.ilstu.edu/~mswalber/ECO240/240Workbooks.html
Contains a number of pre-programmed Excel files on a variety of microeconomics applications.

Free Online Course Materials

Jonathan Gruber. Principles of Microeconomics. (Massachusetts Institute of Technology: MIT OpenCourseWare), http://ocw.mit.edu
Principles of Microeconomics is an introductory undergraduate course that teaches the fundamentals of microeconomics. This course includes a full set of lecture videos and a selection of problem solving videos.
View the complete course at MIT OpenCourseWarehttp://ocw.mit.edu/courses/economics/14-01sc-principles-of-microeconomics-fall-2011 or YouTube http://www.youtube.com/playlist?list=PL61533C166E8B0028 or iTunes U https://itunes.apple.com/ru/itunes-u/ocw-scholar-principles-microeconomics/id496265654?mt=10

On-line support
Students are able to view the Learning Management System (LMS) page for this course. This is the site where lecture presentations, additional study materials and announcements are posted. Lecture presentations are generally posted in advance of the lecture. There are problem sets for the home assignments, the mid-term exams and the final exam in LMS page.