

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
WEST UKRAINIAN NATIONAL UNIVERSITY
FACULTY OF ECONOMICS AND MANAGEMENT

Department of Economics and Economic Theory

Methodical recommendation for task solving

on course

“MICROECONOMICS”

Degree of higher education:	<i>Bachelor</i>
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PURPOSE AND TASKS OF THE COURSE “MICROECONOMICS”

Purpose of the course

The purpose of the course “Microeconomics” is the formation of students’ knowledge and forming the behavior and decision-making by individual economic micro agents in order to achieve the goal for the available limited resources, which may alternatively apply.

The program of the course is focused on deep learning of the theory of functional analysis, the main appointment of which is to analyze the functional relationships between key economic variables. This enables one to predict the chain of causality in the economy, determining in advance the expected results of decisions made.

The focus of Microeconomics is the consumer behavior model that generates demand for the desired preferences and budget, the activity of the manufacturer and its optimization, market demand and supply, factors determining the price and sales volumes at the market of a particular product, profit maximization due to the type of market structure, resource allocation efficiency, etc.

The methodical recommendations’ main purpose is to provide students with knowledge of the behavior of economic agents in market conditions, to equip them with a universal instrument for the adoption of optimal economic decisions making due to the limited resources. The consequences of these decisions are reflected in the person’s everyday life through a thoughtful and meaningful attitude to the economic environment phenomena, ability to solve economic problems, ability to apply elements of economic knowledge to specific economic situations.

The methodical recommendations explore the following main problems of Microeconomics such as: consumer behavior theory, production theory, peculiarities of cost forming in short and long-term market periods, the company's decision on prices and production volumes in conditions of different market models: perfect competition, monopoly, monopolistic competition and oligopoly, the origin of the demand for resources and the mechanism of formation of prices for them, as well as the mechanism for achieving the general equilibrium and the efficiency of the market system functioning at the macro level.

Tasks of the course

Tasks of the course are to equip the student a clear idea that success of any business depends not only on the availability of starting capital and entrepreneurial talent, but also on knowledge of the economic laws of micro systems in different market situations and their ability to be applied effectively. Mastering the course should develop students' skills in practical use of microeconomic analysis in decision-making. Acquired knowledge should become a part of general culture of specialist.

Discipline refers to the general economic fundamental sciences that form the professional outlook of future economists.

The name and description of competences the formation of which provides the study of discipline:

- ability to understand the peculiarities of functioning of modern economy at micro and macro levels;
- understanding of the main peculiarities of the leading scientific schools and directions of economic science;
- ability to define the segmentation of the labor market, the structure of demand and supply, employment and unemployment.

Prerequisites for studying the discipline:

Prerequisite for studying the discipline are other disciplines that have been studied before, as: "Economic Theory", "Macroeconomics", "Mathematics" and other.

The learning outcomes obtained before: to know and use the economic terminology and categories obtained while studying the disciplines, be able to analyze certain economic processes and phenomena, understand peculiarities of the market economy functioning, ability to make own scientific assessment of any economic phenomena, ability to solve complicated specialized tasks and practical problems in economic sphere that are characterized by conditions complexity and uncertainty that requires the usage of theories and methods of economic science.

Results of study:

- to know and use the economic terminology, explain basic concepts of microeconomics and macroeconomics;
- to explain the models of social and economic phenomena from the view of fundamental principles and knowledge on the basis of understanding of the main directions of the developing economic science;
- to define demand and supply at the labor market, analyze the structure of employment and unemployment.

The structure of the methodical recommendations contains 15 themes each of which explores specific phenomena. Each theme ends with a training course that includes the main economic terms, questions for students' self-control, test and tasks. There are glossary and references at the end of the methodical recommendations.

PRACTICAL LESSONS ON COURSE “MICROECONOMICS”

Practical lesson No 1

Theme: Subject and Methodology of Microeconomics

Purpose: to understand what does Microeconomics study, reveal the difference between normative and positive microeconomics, research methods, subject and object of microeconomics.

Issues:

1. Microeconomics as a science and the main stages of its historical development.
2. Microsystem: the essence and structure.
3. Subject and methods of microeconomic researches.

Literature: 1, 3, 9, 13, 15.

Key terms and concepts

Microeconomics. Micro level. Economic laws. Economic subjects. Microeconomic analysis. Microeconomic processes. Analysis of consumer's behavior. Positive analysis. Normative analysis. Microsystem. Household. Enterprise (firm). State. Economic resources. Limitation of economic resources. Interchangeability of economic resources. Complementarity of economic resources. Material product. Service. Problem of choice. Alternative value. Diminishing returns of production factors. The law of increasing opportunity cost. Principle of consumer's rationality. Subject of microeconomics. Methodology of microeconomics.

Questions and tasks for self-testing and monitoring of learned knowledge

1. What does Microeconomics study? Which functions does it perform?
2. What are the main phases of development of Microeconomics as a science?
3. What is the contribution of famous domestic economist E. Slutsky into development of Microeconomics as a science?
4. Which components of the microsystem do you know?
5. What are subject and objects of Microeconomics study?
6. What is the structure of resources of production?
7. What do “limitation of resources” and “infinity of human's needs” mean?
8. What are features of the resources of production?
9. How do you understand the problem of choice in business activity?
10. What does the curve of production opportunity mean?
11. Please characterize the methods of microeconomic analysis.
12. What do normative and positive Microeconomics mean?
13. What is the basis of the method of marginal values in research of microeconomic phenomena and processes?
14. What is the essence of the method of functional analysis in microeconomic research and which role does it have?
15. Please give a characteristic of object of microsystem.

Practical lesson No 2

Theme: The Marginal Utility Theory and Behavior of Consumer

Purpose: to reveal the content of marginal utility and show its difference from total utility, the law of diminishing marginal utility and formulate the rule of utility maximization according to the cardinal theory.

Issues:

1. Human's needs, its classification and structure. The law of unlimited increase of needs.
2. Utility and its functions. Marginal utility of product. The first law of Gossen.
3. The concept of consumer's equilibrium. The second law of Gossen.

Literature: 2, 3, 8, 14, 19, 20.

Key terms and concepts

Human needs. Infinity of needs. Working needs. Status needs. Absolute needs. Real needs. Solvent needs. Material needs. Nonmaterial needs. Spiritual needs. Social needs. Economic needs. Economic product. Services. The law of needs increasing. The saving labor law. The theory of consumer's behavior. Consumer's purpose. Independence of consumer. Limitation of consumer. Choice of consumer. Rankings of needs. Transitivity of benefits.

Utility. Value. Cardinal concept of product utility. Ordinal concept of consumer. Utility. Utiles. Utility function. Total utility. Average utility. Marginal utility. The law of diminishing marginal utility. The first law of Gossen. The second law of Gossen. Market consumption basket. Equilibrium of consumer.

Questions and tasks for self-testing and monitoring of learned knowledge

1. What is a need?
2. How and by which criteria the needs can be classified?
3. How can you characterize peculiarities of economic needs?
4. Explain the essence of the theory of consumer's behavior.
5. According to which rules the microeconomic modeling is achieved?
6. Which suggestions the model of product choice of consumer is based on?
7. How can the utility of product for consumer be determined?
8. In which units the utility of product is determined?
9. On which basis the utility function is based?
10. What does the value of product mean for particular individual?
11. What is the essence of the theory of marginal utility of product?
12. What is the difference between labor value and marginal utility theories?
13. Please explain what does the total utility mean?
14. Characterize the definition of marginal utility of product.
15. Give a definition of the first law of Gossen.
16. What is the essence of the second law of Gossen?
17. What is the correlation between total and marginal utility of product?
18. Which methods of utility determination are used in microeconomics?
19. Define commonalities and differences between cardinal and ordinal theories of marginal utility.

Examples of tasks solution

Task 1

Price of product X is 3 m.u. Price of product Y – 1,5 m.u. Consumer wants to maximize the utility from the consumption of these two products. He evaluates marginal utility of product Y as 60 units.

How consumer will evaluate the marginal utility of product X?

Solution of the task

There is equation for rational consumer:

$$MU_x / P_x = MU_y / P_y = \dots = MU_n / P_n,$$

So we can create next equation:

$$MU_x / P_x = MU_x / 3; MU_y / P_y = 60/1.5$$

So we can find unknown marginal utility of product X which will be equal to 120 units. So the consumer will evaluate marginal utility of product X in 120 units.

Task 2

Student uses books (product X) and magazines (product Y) for doing his homework.

Total utility of two products of different number of books and magazines are given in table:

Quantity of products, units	Total utility from consumption	
	books	magazines
1	10	7
2	18	13
3	24	18
4	28	22
5	31	25

Price of one book is 10 m.u. and price of one magazine is 5 m.u.

How many books and magazines can the rational consumer buy if his income for spending for these two products is 40 m.u.?

Solution of task 2

If we talk about rational consumer so we should use the rule of utility maximization: $MU_x / P_x = MU_y / P_y$.

Let's determine the indicators of marginal utility from the consumption of products MU_x and MU_y and also the ratio MU_x/P_x та MU_y/P_y .

For convenience let's we put the results of calculation into the table.

Quantity of goods	MU_x	MU_y	MU_x/P_x	MU_y/P_y
1	10	7	1	1,4
2	8	6	0,8	1,2
3	6	5	<u>0,6</u>	1
4	4	4	0,4	0,8
5	3	3	0,3	<u>0,6</u>

Now we need to find out such a combination of products X and Y for which there is equation $MU_x / P_x = MU_y / P_y$ and necessary is the condition that income is spent completely. In table we gonna mark this equity. It means, in our case the condition of consumer's equilibrium is satisfied for three combinations: $1x+3y$; $2x+4y$ and $3x + 5y$.

Let's check these equities taking into account that income of consumer is equal to 40 m.u.:

1) $1 * 10 + 1 * 5 = 15$ m.u. – income is spent not completely;

2) $2 * 10 + 4 * 5 = 40$ m.u. – income is spent completely;

3) $3 * 10 + 5 * 5 = 55$ m.u. – this combination is impossible as student doesn't have such amount of money.

So, the rational consumer will buy 2 books and 4 magazines for his study.

Tasks for self solution

Task 1

The consumption basket consists of two products: cheese and butter.

Total utility of two products of different quantity of cheese and butter is given in table:

Quantity of goods, units	Total utility	
	cheese	butter
1	20	40
2	38	60
3	52	70
4	62	75
5	67	75

Price of the one package of cheese is 5 m.u. and price of one box of butter is 10 m.u. How many boxes of cheese and butter the rational consumer can buy if his income level is 40 m.u.?

Task 2

Consumer buys apples and bananas every month. In table there are data about total utility which consumer gets from consumption of two products.

Quantity of products, kg	Total utility from consumption	
	apples	bananas
1	50	200
2	100	400
3	140	550
4	175	670
5	195	770
6	205	855

Price of 1 kg of apples is 1 m.u. and price of bananas is 10 m.u.

Suppose that consumer usually buys 5 kg of apples and 2 kg of bananas.

Give answers for the following questions:

1. How much the consumer spends for consumption this quantity of apples and bananas?
2. Which utility he will get from consumption of this quantity of products?
3. At which combination of two products the utility will be maximal?

Task 3

Consumer spends 20 m.u. per month for the purchase of tomatoes and cucumbers.

Marginal utility of tomatoes for him is $20-3x$, where x – quantity of tomatoes (kg). Marginal utility of cucumbers is $40-5y$, where y – quantity of cucumbers (kg). Price of 1-st kg of tomatoes – 1 UAH, and 1-st kg of cucumbers – 0,5 kg.

How many kg of tomatoes and cucumbers will the rational consumer buy?

Task 4

On the basis of table:

Quantity of ice-cream, pc.	1	2	3	4	5	6
Total utility, utils	5	9	12	14	15	15

1. Define marginal utility.
2. Build total and marginal utilities graphically.
3. By which marginal utility value the rational consumer will get maximal total utility?

Task 5

Student makes a choice between two goods – A and B. His income is equal to 56 m.u. The price of product A is 6 m.u., and the price of product B is 4 m.u.

Total utility of goods A and B is given in the following table.

What combination of goods will the rational consumer (student) buy?

Q, units	TU _A	TU _B
1	36	12
2	66	22
3	90	30
4	108	36
5	120	40
6	126	42

Practical lesson No 3

Theme: The Ordinal Theory of Consumer Behavior

Purpose: to get acquainted with the main axioms of ordinal approach, research indifference curves and characterize it, reveal the economic content of the marginal rate of substitution, learn how to represent consumer's equilibrium and its change under the impact of some factors graphically.

Issues:

1. Consumer's choice from the point of view of ordinal positions and axioms of rational consumer's behavior.
2. Indifference curves and their features.
3. Budget restrictions of consumer and their graphical representation. The budget line equation.

Literature: 2, 3, 4, 8, 14, 19, 20.

Key terms and concepts

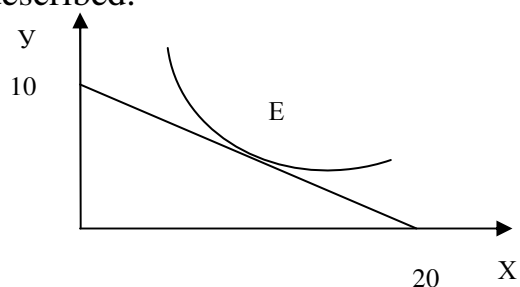
Ordinal theory of consumer's behavior. Consumer's preferences. Desires of consumer. Consumer's possibilities. Paradox of Errow. Axiom of transitivity benefits. Utility of product. Marginal rate of substitution. Indifference curve. Model of J. Hicks. Map of indifference curves. Complementarity of products. Rankings of products. Budget limitation. Budget line. Equation of the budget line. Purchasing possibility of consumer. Equilibrium of consumer. The principle of equal utility. The law of equal marginal utility.

Questions and tasks for self-testing and monitoring of learned knowledge

1. What is the essence of the ordinal theory of utility of product?
2. What is the basis of consumer's preferences and how it appears?
3. Which axioms of the theory of consumer choice do you know?
4. In which phenomena does the Errow's paradox appear?
5. What is the indifference curve?
6. Who was the first who offered indifference curves for the analysis of consumer's behavior?
7. Please characterize the map of indifference curves.
8. Give a definition to the concept "marginal rate of substitution".
9. How can the marginal rate of substitution be determined graphically?
10. Which products are called "products-substitutes"?
11. What is the equation of the consumer's choice theory?
12. What is the budget line?
13. Justify the equation of the budget line.
14. What is the essence of the budget limitation of consumer?
15. Under the influence of which factors is the slope of the budget line changed?
16. How can the consumer's equilibrium in ordinal theory be determined?

Task 1

Income of consumer is 400 UAH per month. At the picture the budget line is described.

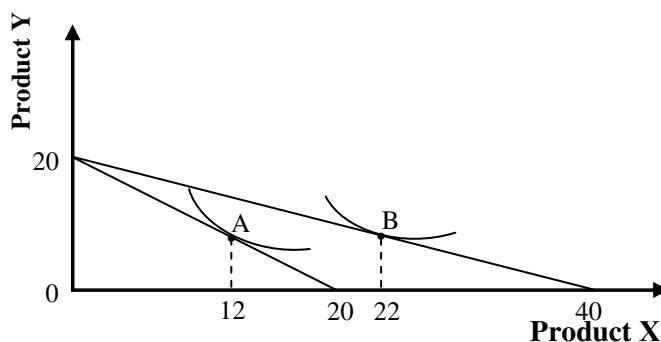


Find out:

- price of product X;
- price of product Y;
- how will the position of budget line be changed if income of consumer increase till 600 UAH?
- write down the equation of described budget line. What is its slope?
- determine the marginal rate of substitution of product X by product Y (MRS_{xy}) in the point E.

Task 2

The picture describes two budget lines of consumer and indifference curves that correspond to them. It is known that income of consumer is 400 UAH.

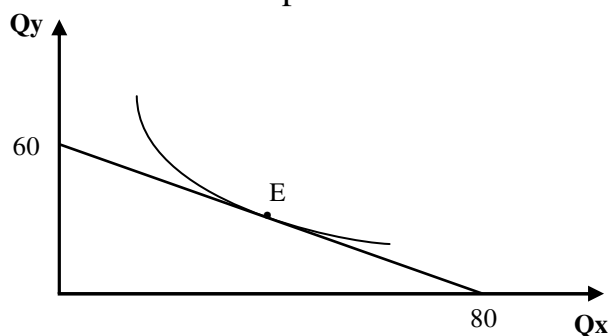


Find out:

- price of product X in the point A and point B;
- price of product Y;
- write down equations of described budget lines;
- build the line of consumer's demand for product X.

Task 3

Graphical representation of consumer's choice is given at the picture. Consumer's equilibrium is achieved at the point A.



- 1) Find out the amount of monthly income of consumer if price of product X is 6 UAH.
- 2) What should be the price of product Y?
- 3) Write down the equation of described budget line.
- 4) Determine the marginal rate of substitution of product X by product Y at the point A.

Task 4

The data in the table characterize the indifference curve graphically; quantity of product X is described on axis X, and product Y – on axis Y.

Set of products	Q _x (number of units)	Q _y (number of units)
A ₁	2	10
A ₂	3	8
A ₃	5	6
A ₄	7	5
A ₅	10	4

Build the budget line of consumer, if it is known that prices of products X and Y are 10 and 7,5 m.u., and consumer's income is 90 m.u.

Determine the optimal set of products X and Y with the purchase of which consumer will maximize his utility.

Task 5

The table contains information about different sets of product X and product Y which provide same level of utility for consumer.

Level of utility U ₁		Level of utility U ₂		Level of utility U ₃	
X	Y	X	Y	X	Y
1	9	2	10	4	11
2	7	3	8	5	9
4	4	5	5	7	6
7	2	8	3	10	4
9	1	10	2	12	3

- a) describe three indifference curves;
- b) which one from indifference curves reflects the highest level of utility?
- c) build the budget line of consumer if it is known that his income is 100 m.u., price of product X is 10 m.u. and price of product Y is 10 m.u. as well. Define which sets of product are available for consumer and which sets are not available. Please define the consumer's choice which reflects the maximum possible benefit for him.

Practical lesson No 4
Theme: The Analysis of Consumer Behavior

Purpose: to declare the economic essence of curves “income-consumption” and “price-consumption”, reveal the essence of the effect and substitution effects and their impact on demand of consumer.

Issues:

1. Change of the optimal condition of consumer as a result of the change of its income. The curve “income-consumption”.

2. Change of the consumer’s choice as a result of change of one of commodities and both products. The curve “price-consumption”.

3. The income and substitution effects. Single- and multidirectional impact of the effects. Paradox of Giffen.

4. Formation of “surplus of consumer” as a result of excess of utility of products by price.

Literature: 7, 11, 12, 13, 17.

Key terms and concepts

Curve “income-consumption”. Engel’s curves. Engel’s laws. Normal goods. Low-quality goods. Luxury goods.

Curve “price-consumption”. Substitution effect. Effect of income. Commodity of Giffen. Paradox of Giffen. Commodity of Veblen.

Questions and tasks for self-testing and monitoring of learned knowledge

1. What is the essence of the theory of analysis of consumer’s behavior?
2. How the curve “income-consumption” is built? Characterize it.
3. How does the curve “income-consumption” for normal goods look like?
4. What does the Engel’s curve represent?
5. Which Engel’s laws do you know?
6. What does the curve “income-consumption” represent? How to build it?
7. How does the curve “income-consumption” for different types of products look like?
8. On the basis of which curve is the demand curve built?
9. What does the effect of income mean?
10. Give explanation of the substitution effect in justification of consumer’s behavior.
11. How does the paradox of Giffen achieve? Give examples of commodities of Giffen and Veblen.

Task 1

Consumer spends all his income in sum 500 UAH on a purchase of two products X and Y. Price of one unit of product X – 50 UAH, price of one unit of product Y – 25 UAH. Optimal consumption basket (E_1) consists of 5 units of product X and 10 units of product Y.

Increase of consumer's income till 600 UAH leads to the shift of the point of equilibrium. Now optimal basket (E_2) includes 6 units of product X and 12 units of product Y.

Decrease of income to 250 UAH gives a new optimum (E_3), basket consists of 3 units of product X and 4 units of product Y.

1. Show the change of consumer's equilibrium graphically.
2. Build the curve "income-consumption" of consumer as a result of the change of his income.

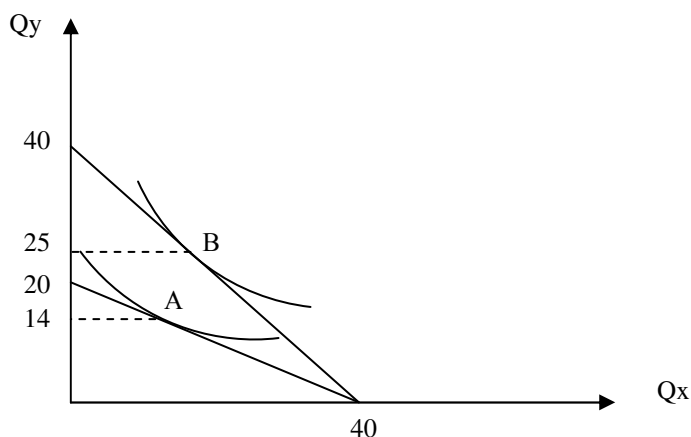
Task 2

Consumer has income 200 UAH and spends it on a purchase of product X at price 10 UAH and product Y at price 20 UAH. Choice of consumer, who maximizes utility, includes 12 units of product X and 4 units of product Y. Increase of price of product X till 20 UAH causes the shift of equilibrium point ($4x;6y$), and decrease to 5 UAH – to ($20x;5y$).

1. Show graphically how the position of the budget line will change its position in case of decrease and increase of price.
2. Build the curve "price-consumption".
3. Build the individual demand curve for product X using the line "price-consumption".

Task 3

There are at the picture two budget lines of consumer who buys product X at price 20 UAH. Determine what is the sum of his income? What are prices of product Y at point A and point B? Write down the equation of these budget lines in case if the price of product Y is changing, but income and price of product X are constant.



Task 4

The budget of consumer per week is 200 UAH and he spends it for the purchase of product X at price 4 UAH, product Y at price 5 UAH. The choice of consumer who maximizes utility includes 2,5 units of product X and 2 units of product Y. Increase of income by 20 UAH leads to the shift of equilibrium point and now consumption basket includes 5x and 4y. And increase of income by 10 UAH more – in accordance 5,5x and 5,6y.

Build the curve “income-consumption”.

Task 5

From all offered variants rational consumer has chosen the one that consist of 20 units of product x_1 and 25 units of product x_2 . The utility function of consumer looks like: $U(x_1; x_2) = x_1^2 + x_2$; while income of consumer is 100 UAH per month.

Define how the income of consumer will be changed if a new set includes 10 units of product x_1 and 15 units of product x_2 , income level has not been changed.

Task 6

Build the curve “income-consumption” for consumer with the utility function.

1) $U(x_1; x_2) = x_1^{1/2} + x_2^{3/2}$

2) $U(x_1; x_2) = \min\{2x_1; 5x_2\}$

Price of first product is 15 UAH, price of the second one – 30 UAH.

Task 7

The budget of consumer is equal to 60 m.u. The price of product X is 15 m.u., price of product Y is 5 m.u.

The utility function is: $U=4xy$.

1) find out the optimal combination of goods;

2) draw the line “price-consumption” for product X if its price decreases and becomes equal to:

a) 10 m.u.;

b) 6 m.u.;

c) 4 m.u.;

3) describe the demand curve for product X.

Practical lesson No 5

Theme: The market demand and supply and their elasticity

Purpose: to determine the concepts of demand and supply, to reveal the main factors effecting it, research methods of representation of the market equilibrium and factors of it change, reveal the essence of the demand and supply elasticity and factors effecting it.

Issues:

1. Demand and factors that have impact on it. The law of demand.
2. Supply and factors that have impact on it. The law of supply.
3. Interaction of demand and supply.
4. Demand elasticity: indicators and factors of influence.
5. Supply elasticity.

Literature: 5, 6, 7, 11.

Key terms and concepts

Demand. Amount of demand. Supply. Amount of supply. Market equilibrium. Equilibrium price. Equilibrium amount of sale. Surplus. The law of demand. The law of supply. Deficit. Demand price. Supply price. Elasticity. Price elasticity of demand. Income elasticity of demand. Cross price elasticity of demand. Elastic demand. Inelastic demand. Demand with unitary elasticity. Absolutely elastic demand. Absolutely inelastic demand. Supply elasticity. Elastic supply. Inelastic supply. Supply with unitary elasticity. absolutely elastic supply. Absolutely inelastic supply. "Price ceiling". "Price floor".

Questions and tasks for self-testing and monitoring of learned knowledge

1. Give definition of demand of product.
2. What does the law of demand prove? What are exceptions from the law of demand?
3. Characterize the impact of price and non-price factors on demand.
4. How do you understand the essence of the law of supply?
5. Characterize the methods of determination of market equilibrium parameters.
6. Give definition of the concept "elasticity of demand". Which typed of elasticity of demand do you know?
7. Explain the methodology of calculation of demand and supply elasticity.
8. Which factors affecting elasticity demand and supply do you know?

Task 1

The demand function for product: $Q_D = 9 - 2P$.

The supply function: $Q_S = -3 + 2P$.

- Please determine equilibrium amount and price.
- Which situation will happen to the market at established fixed price 4 UAH?
- Suppose that the amount of demand has decreased by 20 %. What will happen to equilibrium amount and price?
- The government is going to establish tax in sum 1 UAH per 1 unit of product. What will happen to equilibrium amount and price?
- The producer gets subsidy 2 UAH per 1 unit of product. How will it influence on equilibrium price and sales amount?

Task 2

The family Shevchenko consumes 1000 liters of petrol at price 20 UAH per 1 liter. The coefficient of price elasticity of demand for petrol $E_P = -0,5$.

How will expenditures for petrol of the family be changed if its price increases by 65%?

Task 3

Please define the coefficient of price-cross elasticity of demand if it is known that increase of price of product Y from 10 UAH to 15 UAH has led to increase of amount of purchases of family of product X from 5 kg to 8 kg per month.

Is demand of product X elastic? Explain what kind of commodities are products X and Y: substitutes or compliments?

Task 4

Demand function of cucumbers is $Q_d = 9 - 2P$.

Supply function is: $Q_s = -3 + 2P$.

Tasks:

- define equilibrium indicators at the market (P and Q);
- define how decrease of demand by 5% impact on price of cucumbers.

Task 5

When price of 1 kg of fish was 50 UAH Ukrainian family bought 2 kg of fish every week.

After the price increased to 60 UAH the consumption of fish in family decreased to 1 kg per week.

Please define the coefficient of elasticity of fish. Is this product elastic?

Task 6

~~Demand function is $Q_d = 50 - 0,8P$~~
As a result of implementation of new technology of production Q_s of product X is changed: $Q_s = -16 + 2P$.

Please define the equilibrium price and equilibrium amount of consumption before and after implementation of new technology.

Practical lesson No 6

Theme: The Microeconomic Model of the Enterprise

Purpose: to reveal the essence of enterprise, its peculiarities and motives of activity, indicators of income and profit.

Issues:

1. Firm and enterprise: distinctive features of microeconomic characteristics.
2. Enterprise as a part of microeconomic system. Types of enterprise.
3. Momentary, short-term and long-term market periods of the enterprise functioning.
4. The essence of production functions, its features, types and forms of representation.

Literature: 2, 4, 7, 15, 16.

Key terms and concepts

Firm. The purpose of firm. Enterprise. Production and technical unity of the enterprise. Economic unity of the enterprise. Production and technical functions of the enterprise. Economic functions of enterprise. Social functions of enterprise. Private enterprise. Collective enterprise. State enterprise. Joint venture. Associations. Corporations. Consortia. Concerns. Production process. The main production processes. Auxiliary production processes. Organization of production. Specialization. Working place. manufacturing site. Department. Instant market period. Short-run market period. Long-run market period. Production function.

Questions and tasks for self-testing and monitoring of learned knowledge

1. What is a firm as an economic subject?
2. What does determine enterprise as a legal entity?
3. What distinguishes the company as a legal entity from other forms of business?
4. Which features of enterprise do you know?
5. Which types of enterprise do you know?
6. Which types in unities do you know? Characterize each of them.
7. What does production process mean? Which types of production processes do you know?
8. How do you understand the organization of production?
9. Which principles of organization of production exist?
10. What is working place?
11. Which time market periods do you know?
12. What is technologically effective production?
13. What does economically effective method of production mean?
14. What does the function of production mean?
15. Who was the first who established the function of production, how the amount of production depends on cost of labor and capital?

Practical lesson No 7
**Theme: The Variation of Production Factors
and the Optimum of Producer**

Purpose: to research the function of production, represent dependence between the structure of cost and output, to learn to represent the production function with one and two variable factors graphically, the producer's equilibrium (graphically and analytically).

Issues:

1. The function of production with one variable factor. Total, average and marginal product.
2. The function of production with two variable factors. The curve of similar product – isoquant curve.
3. The choice of combination of production factors due to the criteria of cost minimization or output maximization. Izocost curve.
4. The producer's optimum: graphical, algebraic, economic form of interpretation of it equilibrium functioning.

Literature: 2, 3, 4, 8, 14.

Key terms and concepts

Total product. Marginal product. Variable product. The law of diminishing marginal productivity. Short-run production function. One-factor function of production. Two-factor function of production. Isoquant curve. The map of isoquant curves. Izocost curve. The map of izocost curves. Marginal rate of technological substitution. Producer's optimum. Trajectory of growth.

Questions and tasks for self-testing and monitoring of learned knowledge

1. What is the function of production with one variable factor?
2. How the law of diminishing marginal productivity of variable production factor can be represented?
3. How the amount of total, average and marginal product be calculated? Give definitions of these indicators.
4. On which patterns the production function with two variable factors can be built?
5. What does isoquant mean?
6. How the map of isoquant curves is formed and represented?
7. Which features of isoquant curves do you know?
8. What does the norm of technical substitution of resources mean and how it can be calculated?
9. Explain positive and negative consequences of the effect of production scale. Give some examples.
10. What is izocost curve? Write down the equation of izocost curve.
11. Which variants can get the trajectory of growth of production activity of firm?

Task 1

Determine average and marginal product of the firm and also necessity of the increase of the quantity of workers.

L	1	2	3	4	5	6	7	8
TP_L	10	25	45	70	100	120	120	100

Task 2

The production process of enterprise can be represented by the function of production:

$$Q = 2,5L^{2/3} \cdot K^{1/3}.$$

Find out the algebraic expression of the isoquant curve if $Q=5$, and describe it graphically.

Rate of payments for rent and equipment exceeds the wage rate twice.

Which combination of production factors will the enterprise choose to minimize its cost?

Task 3

Fill gaps in the table:

L	TP_L	MP_L	AP_L
3			30
4		20	
5	130		
6		5	
7			19,5

Task 4

On the basis of data in the table give answers for the following questions:

1) With which number of workers the marginal product becomes decrease?

2) What does the marginal product of the 7-th worker equal to?

3) With which number of employed workers the marginal product will achieve it maximum?

Number of workers, people	1	2	3	4	5	6	7
Output, units	30	50	90	120	145	165	180

Task 5

Calculate average and marginal products of the firm on the basis of following data in table.

Number of workers, people	1	2	3	4	5	6	7
Total product, units	10	20	40	65	80	90	90

Build curves of total, average and marginal products and explain the dependence between these curves. When the enterprise should stop hiring additional number of workers?

Practical lesson No 8
Theme: Cost and Revenue of the Enterprise

Purpose: to reveal the essence of cost in short-term and long-term periods, show the interdependence between average and marginal cost, learn to assess the final result of enterprise activity through revenue and cost fluctuation.

1. The essence of cost of enterprise and its types. Economic and accounting approaches to the determination of cost.
2. Cost of enterprise in the short-term market period.
3. Cost of enterprise in the long-term market period. The choice of production factors combinations due to the criteria of cost minimization.
4. The concept of minimally effective size of the company and structure of the industry.
5. The essence and forms of the revenue of enterprise in microeconomics.

Literature: 4, 5, 7, 8, 9, 11.

Key terms and concepts

Cost of the enterprise. Economic cost. Private cost. Accounting cost. External cost. Internal cost. Function of cost. Total cost. Variable cost. Average cost. Marginal cost. Long-run average cost.

Normal profit. Economic profit. Accounting profit. Usual income. Capital income. Dividend income. Total income. Average income. Marginal income. Functions of profit.

Effective size of the enterprise. Scale of production.

Questions and tasks for self-testing and monitoring of learned knowledge

1. How do you understand the economic essence of the concept “cost of the enterprise”?
2. What is the difference between economic and accounting approaches to the determination of cost of enterprise?
3. What is the difference between external and internal cost?
4. Characterize the “normal profit” as one of components of possibilities of enterprise?
5. What does fixed and variable cost of the enterprise mean?
6. Which cost of enterprise exist in the short-term period?
7. What is the difference between accounting and economic profit?
8. What are peculiarities of dynamics of average and marginal cost in the short-term period?
9. What are peculiarities of cost in the long-term market period?
10. By which criteria can be done selection of combinations of production factors?
11. Which forms of profit do you know?

Task 1

There is dependence of total cost of enterprise from the amount of output. Please, calculate following types of cost: FC, VC, MC, AFC, AVC, ATC.

Describe graphically the last four indicators.

Q	0	1	2	3	4
TC	60	140	180	240	420

Task 2

The table represents information about cost and revenue of some firm:

Q	TC	FC	VC	ATC	MC	P	TR	MR
0	150					200	0	
1			120				190	
2	340					180		
3	400						500	
4			240			140		
5	500					100		

Fill the gaps in table. Which values of P and Q proves that firm is in equilibrium state? By which values of P and Q the profit will be maximal?

Task 3

Fill the gaps in table taking into account the dependence between the amount of output and total cost of the enterprise.

Describe graphically ATC, AFC, AVC and MC.

Q	TC	FC	VC	ATC	AFC	AVC	MC
0	35						
1	45						
2	60						
3	85						
4	110						
5	140						

Annual cost of the enterprise for keeping buildings and equipment are 150000 m.u., for rent – 10000 m.u., for interest on long-run loans – 60000 m.u., for raw materials and electricity – 600000 m.u., for transport – 20000 m.u., for salary of workers – 360000 m.u., for salary for managers – 95000 m.u.

Please define the amount of fixed and variable cost, and also average total cost, average fixed cost and average variable cost of the enterprise if it known it produces 5000 units of product annually.

Define the amount of marginal cost of the enterprise of output increased by 250 units and total cost increased till 1,36 mln. m.u. Is it profitable for the enterprise to increase the output?

Practical lesson No 9
Theme: The Market of Perfect Competition

Purpose: to catch out the main features of the market of perfect competition, to show in which conditions the firm maximizes its profit, minimizes losses or becomes a bankrupt at the market, to find out the long-run equilibrium is established in some particular industry.

Issues:

1. Features and conditions of the competitive market model functioning.
2. Demand for products, income and profit of competitive firm.
3. Maximization of profit of the firm in conditions of perfect competition.
4. Short-term equilibrium and products supply of the firm and industry in the model of perfect competition.
5. Equilibrium of competitive firm in long-term period.
6. The efficiency of the market of perfect competition.

Literature: 11, 13, 14.

Key terms and concepts

Perfect competition. Market structure. Industry. Equilibrium at the market of perfect competition. Paradox of profit. Breakeven price. Efficiency of production. Efficiency of resources allocation. Point of closure. Surplus of production.

Questions and tasks for self-testing and monitoring of learned knowledge:

1. Which criteria of the market structure are necessary for classification of market of perfect competition?
2. Build up the demand curves of the firm's production in conditions of perfect and imperfect competition.
3. Why the economic strategy of competitive firm is limited by only the determination of optimal amount of output?
4. Why the equality of marginal income and marginal cost is essential for profit maximization in all types of market structure? Why marginal income can be substituted by the price in conditions of the market of perfect competition?
5. Prove in which cases the firm that gets losses in the short-term period should continue the production and in which cases firm should stop it?
6. Is the following statement true: the firm needs to sell maximal amount of products to get maximal profit?
7. Build the supply curve of competitive firm in the short-term period.
8. Justify the conditions of the long-run competitive equilibrium of:
 - a) industry;
 - b) firm.
9. Explain the "paradox of profit" in conditions of the market of perfect competition.
10. Estimate the social efficiency of functioning of the market of perfect competition.

Task 1

The firm functions at the market of perfect competition. The function of total cost of competitive firm in the short-term period is given below.

Amount of output Q , UNITS	Total cost TC , mln. UAH
0	4
1	8
2	10
3	14
4	20
5	28

Define:

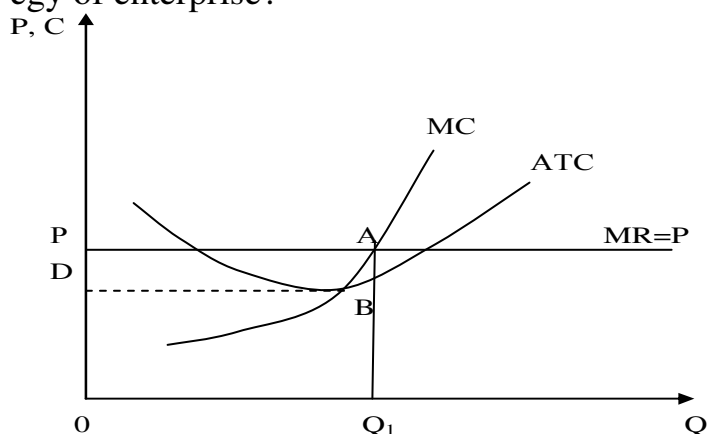
- which amount of output will the firm choose if market price (P) of product is 5 m.u.;
- lower of which level should the price be decreased in order to close the enterprise?

Task 2

The graph represents the curves of cost of the enterprise that works in conditions of perfect competition. P – is a market price.

Define:

- the amount of output at which the profit of enterprise is maximal;
- mark on the graph the square that correspond to the level of profit of enterprise at given price and output levels;
- suppose that the industry is in equilibrium conditions. What kind of equilibrium it is: short-term or long-term? Justify your answer;
- how will the decrease of market demand for product influence on the strategy of enterprise?



Task 3

The competitive firm has a function of average variable cost $AVC = 0,1 Q + 2$. Fixed cost for production is 3 m.u. Find out the supply function of given firm particularly and of industry as a whole if there are 100 similar firms at the market.

Task 4

Cost per one unit of product of the firm in conditions of perfect competition is in the following dependence from the amount of production:

Output, units	ATC, UAH/unit	AVC, UAH/unit	ATC, UAH/unit	MC, UAH/unit
0	0	0	0	-
1	60	45	105	45
2	30	42,5	72,5	40
3	20	40	60	35
4	15	37,5	52,5	30
5	12	37	49	35
6	10	37,5	47,5	40
7	8,57	38,57	47,14	45
8	7,5	40,63	48,13	55
9	6,67	43,33	50	65
10	6	46,5	52,5	75

a) Will the enterprise produce output in the short-term period if the price of product is 32 UAH? Why “yes” or why “no”? If the enterprise produces so what amount of output will maximize profit or minimize loss? Explain please. Define the amount of economic profit or loss.

b) give the answer for the last question if the price of product is 41 UAH;

c) give the answer for the last question if the price of product is 52 UAH.

Task 5

The firm is in conditions of perfect competition. There are the total cost function in the short-term period in the table:

Q , units	TC , UAH	TVC , UAH	AVC , UAH	ATC , UAH	MC , UAH
0	9				
1	11				
2	15				
3	21				
4	29				
5	39				

There are 1000 firms in the industry. The market demand curve is represented in the table:

Price P , UAH	Amount of demand Q_d , units	P	Q_s of firm	Q_s Of industry
3	3000			
5	2000			
7	1500			
9	1000			

Define, what is the equilibrium price? What is the amount of output of each firm in the industry? What is going to happen in the long-term period: will firms move to another industry or will exit from it?

Practical lesson No 10
Theme: The Monopoly Market

Purpose: to find out the essence of the concept “monopoly”, types and conditions due to which it can exist, to research the methods of benefit maximization or cost minimization in short- and long-term periods, the practice of price discrimination and its consequences.

Issues:

1. The pure monopoly model and its distinctive features.
2. Demand for the products of monopoly and its revenue.
3. Short-term and long-term equilibrium of the monopoly market in context of profit maximization.
4. Pricing of monopoly. Price discrimination.
5. Economic consequences of market monopolization. Necessity and methods of antimonopoly regulation.

Literature: 5, 7, 11, 14.

Key terms and concepts

Absolute price discrimination. Anti-trust policy. Open monopoly. The power monopoly. Closed monopoly. The Herfindahl-Hirschman Index. The Lerner Index. Concentration factor. Intertemporal price discrimination. Monopolist. Monopoly. Monopsony.

Incomplete (imperfect) competition. Natural monopoly. Market power. Market segmentation. Social monopoly price. Price discrimination. Price discrimination of the second degree. Price discrimination of the third degree. Net monopoly.

Questions and tasks for self-testing and monitoring of learned knowledge:

1. What are the main features of the monopoly market?
2. Prove that the marginal revenue curve of the monopoly is situated below its demand curve. Why is the marginal revenue curve getting far from the demand curve when it moves down?
3. What is the difference between the monopolist's demand curve and the firm's demand curve at the competitive market? Why can't the monopolist's demand curve be absolutely elastic?
4. Will the firm-monopolist always get a profit? What is the reason of that?
5. What is the connection between price demand elasticity of product of the firm-monopolist and its marginal income?
6. Why can't we build the supply curve of firm-monopolist?
7. What does the monopolist's equilibrium in the long-term period mean?
8. What is the essence of the price discrimination? What types of price discrimination do you know? Why is the price discrimination inherent to monopoly market and is profitable for society?
9. Suppose that the firm can practice absolute price discrimination. What will be the lowest price it can establish and what will be the total amount of the output?
10. Can the monopoly in industry be more effective than competition? By which conditions? Please give examples of such situations in your country, city.

Task 1

The cost function of monopoly is $TC=50+Q^2$ (it means that fixed cost FC equal to 50 UAH, and variable $VC = Q^2$).

Demand for products of monopoly is represented by the function $P = 40 - Q$.

Find out what the amount of output will the monopolist produce to maximize its profit.

Task 2

There is information about the demand function for products of monopolist and its total cost for the production of output is given in the following table:

The amount of output Q , units	Price P , UAH	Total cost TC , UAH
0	13	12
1	12	14
2	11	18
3	10	24
4	9	32
5	8	42
6	7	54

By which amounts of the output will the monopolist maximizes its profit, which price will it establish?

Task 3

The monopoly's function of cost is $TC = 20 + 8Q$. The demand functions at both markets are: $P_1=38 - 6Q$, $P_2=120 - 14Q$.

Find out the amounts of sales and price at each of markets that maximize monopoly profit.

Task 4

The monopoly's function of cost is $TC = 16 + 9Q$, and the demand function is $P = 105 - 4Q$.

Determine the amount of the output, price and sum of maximal profit of monopoly. How will the amount of production and the sum of maximal profit be changed if the monopoly will provide perfect price discrimination?

Task 5

The monopoly sells its product at two different markets. The demand curves at markets look like: $P_1 = 200 - Q_1$ та $P_2 = 190 - Q_2$

The function of cost for production is $TC = 500 + 400Q$,
where $Q = Q_1 + Q_2$.

a) What are prices and the quantity of sold goods that maximize the monopoly's profit when it can sell the product at these markets at different prices?

b) What is total demand for product is supposed to be if the monopoly firm cannot provide price discrimination policy? What will be the price and amount of output in such conditions?

Practical lesson No 11
Theme: The Market of Monopolistic Competition

Purpose: to reveal the peculiarities of market of monopolistic competition, explain how to determine price and output that maximizes profit of the firm, to define the main methods of non-price competition at this market.

Issues:

1. Peculiarities of monopolistic competition.
2. Equilibrium of monopolistic competitive producer in short-term and long-term market periods.
3. Non-price competition.
4. Public efficiency of monopolistic competition.

Literature: 7, 14, 18, 19, 20.

Key terms and concepts

Monopolistic competition. The market of monopolistic competition. Entrance into the market. Product differentiation. Non-price competition. Advertisement. Consumption stimulation. Promotion.

Questions and tasks for self-testing and monitoring of learned knowledge:

1. Is the restriction of competition available for the market of monopolistic competition? Why “yes” and why “no”? When can we talk about the advantage of competition and when about the advantage of the monopoly in the analysis of this market structure?
2. How can the price elasticity of demand for the product of the firm-monopoly be characterized? How the price elasticity of demand influences on the producer’s behavior?
3. Explain desirable variants of price and amount of output in conditions of monopolistic competition. Give analytical and graphical explanation of parameters of equilibrium of monopolistic competitor.
4. Why competitive producer can’t get economic profit during long-term period?
5. Why factors of non-price competition take important role in the functioning of the market model of monopolistic competition?

Task 1

Demand for products of the enterprise that functions in conditions of monopolistic competition, is described by the function: $Q_d = 12 - 0,5P$.

The total cost function of the enterprise in the short-run period looks like:
 $TC = 2Q^2 - 4Q + 10$,

where Q – is the amount of output, thousand units.

At which amount of output the enterprise will maximize its profit?

At which price the enterprise will realize production? Calculate the amount of profit.

Task 2

The function of average cost of the firm-monopolistic competitor at the market:
 $ATC = 3Q - 2$.

Demand for the products of firm: $Q = 52 - 2P$.

After the advertising campaign implementation the cost for which were
 $C_{рекл} = 0,5Q^2 + 6Q$, demand increased and was equal to $Q = 104 - 2P$.

Define the profit of the firm before and after the advertising campaign implementation and make conclusions about its effectiveness.

Task 3

Industry demand $Q = 600 - 10P$ for products is satisfied by 20 enterprises, total cost for production of each of them are represented by the function:

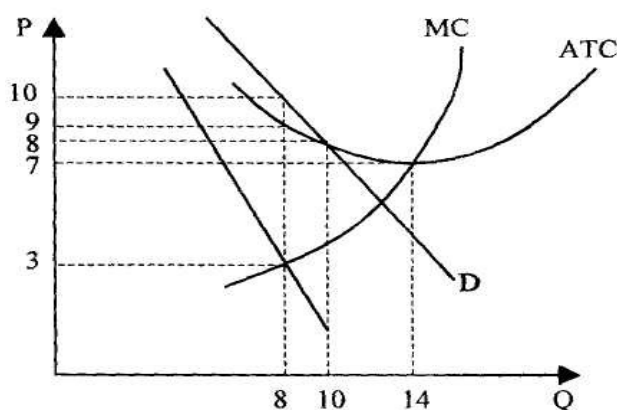
$$TC = Q^2 - 4Q + 20.$$

Define absolute change of profit of each enterprise as a result of the entrance additional 2 analogical enterprises into the field. Make some conclusions.

Task 4

Pic 1 graphically represents the activity of the firm in conditions of monopolistic competition. Give answer for the following questions:

1. At which amount of output the firm maximizes its profit?
2. At which price the firm will sell the given amount of output?
3. Will the firm get economic profit in this situation? If yes, so what will be the amount of profit?
4. What is the time interval at which the firm functions: long-term or short-term? Justify your answer.



Pic. The firm in conditions of monopolistic competition

Practical lesson No 12
Theme: Oligopoly Market

Purpose: to reveal peculiarities of the market of oligopoly, explain how the interaction of firms influences on price and output establishment, determine the main models of equilibrium at this market.

Issues:

1. Oligopoly, its essence and the main features.
2. Theoretical models of oligopoly. Duopoly by Cournot and Bertran.
3. The model of broken demand curve as a type of oligopoly pricing.
4. Secret agreements at the oligopoly market.
5. The game theory in oligopolistic strategy.
6. The efficiency of oligopoly.

Literature: 7, 8, 9.

Key terms and concepts

Oligopoly. Oligopolistic relationship. Duopoly. Oligopsony. Conspiracy. Cournot equilibrium.

The oligopoly models. Stackelberg equilibrium. Bertrand equilibrium. Nash equilibrium. Game theory. Theory of broken demand curve.

Price war. Price leadership. Cartel.

Questions and tasks for self-testing and monitoring of learned knowledge:

1. By which features the oligopoly can be characterized as a special form of imperfect competition?
2. How do you see peculiarities of the market equilibrium foundation according to Bertran and Cournot?
3. On what basis does cartel function? Why cartels are usually unstable?
4. Describe the broken demand curve model. What is the rigidity of prices at oligopolistic market? Give a graphical explanation.
5. Justify the logic of business behavior of firms outsiders due to one dominant firm at the market?

Task 1

In the duopoly Cournot model there is inverse demand function $P=120 - Q$.

Marginal cost of both firms for goods manufacturing in conditions of constant return on the scale are same and equal 9.

Define:

- 1) output of each firm, of industry and market price for production of the firm, and also profit;
- 2) how these indicators will be changed if to suppose that producers can make agreement about cooperation;
- 3) how will be changed the parameters of equilibrium at the market in conditions of perfect competition.

Task 2

At the oligopoly market there is a firm-leader that has the cost function $TC = Q^2 + 3Q$.

The function of market demand is $P = 90 - Q$; other firms outsiders can supply 45 units of production to the market at price of leader.

Define output and price of leader.

Task 3

Transportation company "Alfa" functions in conditions of oligopoly.

Find out the line of demand and marginal income of the company "Alfa" if it is known that at the market the price is set at level $P = 17$ m.u., and the amount of output is $Q = 15000$ units.

Demand for services of the company has two areas: if price exceeds 17 m.u. then demand is more elastic and is characterized by the function $Q_1 = 100 - 5P$.

If the price is less than 17 m.u., then demand is less elastic and is characterized by the function $Q_2 = 40 - 1,5P$.

1. Which oligopoly model given services market can belong to? Represent the model graphically.

2. If it is known that marginal cost in given conditions are changed according to the level $MC_1 = 0,02Q^2 - 0,2Q + 4,8$ till $MC_2 = 0,02Q^2 - 0,2Q + 12$, so what is going to be price and amount of offered services?

Task 4

At the oligopoly market there are only two enterprises with similar marginal cost values equal to 300 UAH.

Industry demand is represented by the function $Q = 400 - 0,5P$;

where Q – amount of demand, units,

P – price of one unit of products, UAH.

Define the equilibrium price and amount of output of each of duopoly firms if they act:

- a) according to the Cournot model;
- b) as participants of cartel.

Due to which strategy oligopolists get the biggest profit?

Practical lesson No 13
Theme: The Marker of Production Factors

Purpose: to find out the peculiarities of demand for resources, factors that have impact on demand for productive factor, economic essence of the rule of optimal use of resources, research peculiarities of the labor market at different competition level, to reveal the essence of the loan interest and capital discounting, to study the peculiarities of the market of land resources.

Issues:

1. Factors (resources) of production, its types and classification. Derivative nature of demand for resources of production.
2. Demand for resources of production in conditions of perfect and imperfect competition. The law of using of resources.
3. The optimality of use of production resources in long-term market period.
4. The peculiarities of the labor market functioning: demand, supply and market equilibrium.
5. The labor market in conditions of monopsony, monopoly and bilateral monopoly.
6. Capital as a resource of long-term use. Forms of capital.
7. Foundation of investment decisions of use of production factors in the long-term market period.

Literature: 3, 4, 7, 12, 15.

Key terms and concepts

Factors of production. Industrial investments. Financial investments. Intellectual investment. Demand for resources. Derivative nature of demand for resources. Marginal profitability resource (MRPL). The curve of demand for resources. The elasticity of demand for resources.

Marginal cost of firms in the resource (MCL). The rule of cost minimization. The rule of profit maximization. Demand for investment resources. Supply of investment resources. Loan interest. Nominal interest rate (r). Real interest rate (R). The present (current) value of future payments. Discounting. Net present value (NPV).

Questions and tasks for self-testing and monitoring of learned knowledge:

1. What kind of production resources do you know?
2. Which factors determine the demand for production resources?
3. What is the difference between demand for resources in conditions of perfect and imperfect competition?
4. What does represent the law of optimal use of production resources in the long-term market period?
5. What peculiarities of the labor market functioning do you know?
6. What is the role of trade unions at the labor market forming?
7. Justify the essence of the concepts “capital” and “investments”.
8. What are the peculiarities of forming of demand and supply at the investment market?
9. How the interest rate is formed? What types of interests do you know?

Task 1

The firm hires workers and produces goods in conditions of perfect competition.

According to the table define, how many workers the enterprise will hire to maximize profit if wage rate is 150 m.u.

Quantity of labor units, L	Total product of labor, TP_L	Price of unit of product, P	Wage rate, $W=MRC$
1	25	20	150
2	45	20	150
3	60	20	150
4	71	20	150
5	79	20	150
6	85	20	150
7	90	20	150

Task 2

The firm hires workers and produces goods in conditions of perfect competition.

According to the table define total income, marginal product of labor and marginal product in monetary form.

Build the demand curve of labor for given enterprise.

Number of workers, L	Total product, TP	Price of product, P
1	30	150
2	56	150
3	76	150
4	90	150
5	100	150

Task 3

On the basis of given data fill gaps in the table for the enterprise that realizes its production in condition of imperfect competition.

K	TP_K	P	TR	MRP_K	MP_K
1	10	5			10
2	19		87,4		
3		4,5		34,1	
4		4,3	141,9		
5			151,7		4
6	40			8,3	

Task 4

Concluding a contract the firm considers that nowadays 10000 m.u. are equal to future 18000 m.u. in three years.

Define the interest rate for foreign currency deposits in bank.

Practical lesson No 14

Theme: The General Equilibrium and the Welfare Economics

Purpose: to pay attention to the difference between general and partial equilibrium, to reveal the efficiency of exchange, distribution and production, formulate conditions of Pareto-optimal condition of economy.

Issues:

1. The essence and analysis of market equilibrium. Partial and general equilibrium.
2. Equilibrium in the economy of exchange and the efficiency of resources distribution.
3. The welfare economy in the context of general market equilibrium.

Literature: 2, 5, 6, 7, 12, 13.

Key terms and concepts

Market equilibrium. Partial equilibrium. General equilibrium. Equilibrium price. Equilibrium output. Local market. Market of factors of production. Commodity market. Competitive markets. Marginal utility. Marginal social costs for producing goods. Primary market changes. Changes in the market of substitute products. Changes in the market of complementary products. Changes in the effect of feedback. The Walras model of general economic equilibrium. Equilibrium in the economy of exchange. The efficiency of resource's allocation.

Pareto-efficient allocation of resources. Graphic model "Edgeworth box". Curve of contrasts. Curve of consumer's opportunities. Line production capabilities. Welfare Economics. Social welfare. Market regulation. Equality criteria. Utilitarian criteria. Rawls criterion. Pareto criterion. Kaldor-Hicks criteria. Scitovsky criteria.

Questions and tasks for self-testing and monitoring of learned knowledge:

1. What does the partial market equilibrium mean?
2. What is the difference between general and partial market equilibrium?
3. Describe the features of totality of competitive markets on the basis of general market equilibrium analysis.
4. What does the Walras model of general market equilibrium justify?
5. Explain the basic elements if Pareto-effective distribution.
6. How each consumer maximizes his utility in the "economy of exchange" according to cardinal version of consumer's behavior?
7. What does the graphic model "Edgeworth box" show?
8. Describe the curve of contrasts and explain it.
9. What does the curve of consumer's opportunities represent? What factors have impact on it?
10. How can you characterize the welfare economics?
11. What are the reasons of ineffective market regulation?
12. What criteria of welfare assessment do you know? Characterize it.

Task 1

A limited amount of resources (capital – 50 units; labor – 100 units) is distributed between the production of goods A and B.

Production of product A is described by the production function: $Q_A = K^{0,5}L^{0,5}$.

Production function for product B looks like: $Q_B = K^{0,2}L^{0,8}$.

Construct the production contract curve at least at three points.

Task 2

In a competitive market economy, consumers estimate the marginal utility of product X at 4 utils, and product Y at 8 utils.

For firms, the marginal production costs of product X are 6 m.u., and product Y is 4 m.u.

Determine whether the allocation of resources in such an economy is Pareto-optimal.

Task 3

The production possibility frontier is described by the equation $X^2 + Y^2 = 450$.

Society's utility function $U(X, Y) = XY$.

Determine the optimal volume of production of goods.

Can a combination of goods X and Y be technologically efficient from the point of view of society, but economically inefficient?

Task 4

In some agricultural areas the rate of transformation of milk into honey is constant and equal to 3 liters of milk for 1 kg of honey.

The maximum rate of replacing milk with honey is constant and equal to 2 liters of milk for 0.5 kg of honey.

In this area, no one and nothing can influence the market prices.

Which of the following products will be produced and consumed in this area?

Task 5

Determine the Pareto-optimal amount of output of the industry where two enterprises functioning with appropriate production functions:

$$Q_1 = 2L_1^{0,5} \text{ and } Q_2 = 8L_2^{0,5},$$

where Q_1 i Q_2 – amount of output of both enterprises;

L_1 i L_2 – amount of labor resources.

The total volume of labor resources in the industry is 90 units.

Practical lesson No 15

Theme: The Institutional Aspects of the Market Economy

Purpose: to reveal the essence of external and internal effects, research the methods of government impact on the decrease of consequences of action of negative external effects.

Issues:

1. Institutional environment of market economy. Transaction cost.
2. External effects and its correction. Coase theorem.
3. Peculiarities of public goods and conditions of its effective use.
4. The essence of the theory of public choice in institutional implementation of market economy.

Literature: 1, 2, 3, 4, 17.

Key terms and concepts

Market economy. Institutions. Institutional environment. Transaction cost. Property rights. Usus. Abusus. State property. Society interests. Communal property. Cost for searching information.

External effects. Correction of external effects. Negative external effect. Positive external effect. Administrative regulation. Pigou's tax. Pigou's subsidy. Pareto-optimum. Coase theorem.

Goods. Social goods. Public goods. Pareto-improvement. Imperfect goods. Mixed goods. Effective size of production of public goods. Free-rider problem.

Theory of public choice. Political market. Market of public goods. Model of political and economic circle. Referendum. Elections.

Questions and tasks for self-testing and monitoring of learned knowledge:

1. Give the explanation of the concept property rights. What is the structure of property rights?
2. Mention the advantages of private property.
3. What is the basis of decision making in conditions of state property?
4. What do you understand under the concept "transaction cost"? What are the forms of transaction cost?
5. Explain both positive and negative effects of the functioning of micro subjects.
6. What are the main approaches to external effects correction of micro subjects?
7. What does the Pigou's tax mean and what factors have impact on implementation of this tax?
8. Do you think that external effect always needs state regulation? Justify your answer.
9. What are public goods and which peculiarities do they have?
10. How many groups of public goods there are?
11. Explain the free-rider problem. When does this problem appear?
12. What is the essence of the theory of public choice?

Task 1

Demand curve of product A is described by equation $Q_d = 160 - 10P$, and supply curve is described by equation $Q_s = 10 + 5P$ (where P – price of product A; Q – quantity of product A).

It was established that the consumption of the product does not cause environmental pollution only if it does not exceed 50 units.

1. How can the amount of goods sold and consumed be reduced, up to this value with the help of taxes levied from sellers and/or buyers of goods?
2. What will be the equilibrium price of product A?

Task 2

Inverse demand function of paper is described by function $P=200-Q$ (where Q – tons of paper, P – price per one tonn, m.u.).

The supply function of the paper's producer is described by equation $P=80+Q$.

Paper production is accompanied by various types of pollution, such as air pollution, water pollution, etc. Let the marginal damage from pollution (in monetary units) be equal to Q .

1. What will be the equilibrium indicators (equilibrium volume and price) on unregulated competitive market?
2. What will be the marginal social costs and the marginal social benefit of paper production? What will be the social optimum of paper production? Are irreversible losses to society possible in this case? What is the tax (per unit of paper production or per unit pollution) must be introduced to achieve the social optimum?
3. What will be the equilibrium in an unregulated monopoly market? What better for society – a competitive or monopoly market paper production?

Task 3

Determine the Pareto-optimal volume of output of an industry in which there are two enterprises with production functions, respectively:

$$Q_1 = 2 \cdot K_1,$$

$$Q_2 = 2 \cdot K_2,$$

where Q_1, Q_2 – amounts of output of the first and second enterprise, units;

K_1, K_2 – the amount of physical capital used, units, if the total amount of physical capital is 90 units.

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