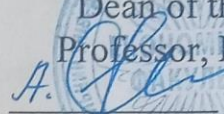
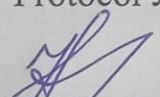


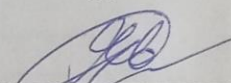
**NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF
UKRAINE**

Faculty of Agricultural Management
Department of Economic Theory

"CONFIRMED"
Dean of the Economic Faculty
Professor, Doctor of Economics

Anatolii DIBROVA
"30" 05 2023 p.

"APPROVED"
at the meeting of the Department Economic Theory

Protocol № 9 dated 12.05.2023 p.

Head of Department
Myrola TALAVIRYA

"REVIEWED"
Program Coordinator "Entrepreneurship, trade and exchange activities"

Program Coordinator
As. Prof. V. Yavorska

**PROGRAM OF THE COURSE
ECONOMICS: MACROECONOMICS**

Specialization 076 – "Entrepreneurship, trade and exchange activities"
Educational program Entrepreneurship, trade and exchange activities
Faculty Economic
Developers: Natalia Bolgarova, PhD in Economics, Associated Professor

Kyiv – 2023 p.

1. Description of the course

ECONOMICS: MACROECONOMICS

Field of knowledge, specialization, educational program, educational degree	
Educational degree	Bachelor's
Specialization	076 Entrepreneurship, trade and exchange activities
Educational program	Entrepreneurship, trade and exchange activities
Characteristics of the course	
Type	Compulsory
Total number of hours	75
Number of ECTS credits	2,5
Number of content modules	2
Course project (work) (if applicable)	
Form of assessment	Exam
Indicators of the course for full-time and part-time forms of study	
	Full-time form of study
Course (year of study)	2(2)
Semester	4
Lecture classes	30
Practical, seminar classes	30
Laboratory classes	
Self-study	15
Individual assignments	
Number of weekly classroom hours for the full-time form of study	2

2. Purpose, objectives, and competencies of the course

Purpose.

The purpose of the study discipline of the course "Economics: Macroeconomics" is to provide students with in-depth theoretical knowledge of the problems of the functioning of the economy - an important sphere of human life, the operation of objective economic laws, familiarization with the methods and conditions of effective management, and a comprehensive systematic understanding of macroeconomic theory and policy.

Objectives:

- methods of measuring the dynamics of national production levels;
- conditions of formation and consequences of disruption of macroeconomic balance;
- the impact of inflation on unemployment and economic development;
- methods of state budget and tax regulation;
- instruments of state monetary policy;
- knowledge of the patterns of functioning of microsystems (individuals, households, enterprises, organizations) in various market situations.
- disclosure of the peculiarities of the functioning of the markets of production factors and the formation of prices for the services of labor, capital, and natural resources according to the type of market structure.

Acquisition of competencies:

Integrated competency (IC):

The ability to solve complex specialized tasks and problems in the spheres of business, trade, and stock exchange activities or in the learning process, which involves the application of theories and methods of organization and functioning of business, trade, and stock exchange structures and is characterized by the complexity and uncertainty of conditions.

General competencies (GC):

GC1. Ability to abstract thinking, analysis and synthesis.

GC6. Ability to search, process and analyze information from various sources.

Professional (special) competencies (PC):

PC3. The ability to carry out activities in the interaction of subjects of market relations.

Program learning outcomes (PLO):

PLO1. Use basic knowledge of entrepreneurship, trade and stock market activity and the ability to think critically, analyze and synthesize for professional purposes.

PLO5. Organize search, independent selection, high-quality processing of information from various sources for the formation of banking data in the field of entrepreneurship, trade and stock exchange activity.

PLO13. Use knowledge of the forms of interaction of subjects of market relations to ensure the activity of business, trade and exchange structures.

3. PROGRAM OF EDUCATIONAL DISCIPLINE "ECONOMICS: MACROECONOMICS"

CONTENT MODULE 1. FUNDAMENTALS OF MACROECONOMIC SCIENCE AND MAIN INDICATORS OF THE STATE

Topic 1. Macroeconomics as a science

Macroeconomics is a branch of economic theory. Economic system as an object of macroeconomic analysis. Macroeconomic subjects and their interaction. Main macroeconomic problems and contradictions.

The subject of macroeconomics. Functions of macroeconomics. Methodology of macroeconomics. Analysis of aggregate economic trends. Aggregated indicators and functional relationships between them. Methods and principles of macroeconomic research. Economic modeling. Exogenous and endogenous variables of macroeconomic models. Static and dynamic models. Ex post - analysis in comparison with ex ante - analysis. The purpose and tasks of macroeconomics. Macroeconomic analysis as a tool of knowledge. Positive and normative analysis. Theoretical justification of economic policy. Macroeconomic forecasting.

Formation and development of macroeconomics. Modern macroeconomic theories: post-Keynesian macroeconomics, neoclassical macroeconomics, monetarism. The main macroeconomic problems and contradictions of the economy of Ukraine.

Topic 2. Macroeconomic indicators and their measurement

Economic circulation in a simple economic system. The structure of the model of economic circulation. Interaction between households and firms. The market of resources and the market of products. The model of circulation with the inclusion of the foreign economic sector. The system of national accounts as a normative basis of macroeconomic accounting. Main macroeconomic indicators: national production volume, general price level, employment. Gross national income and gross domestic product. GDP calculation methods: production, final use, distribution. Determination of final and intermediate products, added value. Double counting and its exclusion. Dynamics of GDP in Ukraine. Price index and deflator.

Topic 3. Model of aggregate demand and aggregate supply

The essence of aggregate demand, its difference from individual demand. Aggregate demand and its model. Structure of aggregate demand. Price factors that affect aggregate demand: changes in the interest rate, the wealth effect, the volume and structure of imports. Aggregate demand curve (AD). Non-price factors that affect aggregate demand. Changes in consumer spending, investment spending, government spending, and net export spending. Planned and actual costs.

Aggregate offer. The short-run aggregate supply curve. Changes in prices and real GDP in different sections of the short-term aggregate supply curve. The long-run aggregate supply curve. Factors affecting aggregate supply: price factors - interest rate change, price level change; non-price factors - changes in prices for resources, labor productivity, legal norms. Keynesian aggregate supply curve. The classic aggregate supply curve. Generalized aggregate supply curve.

Balance of aggregate demand and aggregate supply. The equilibrium price level. Equilibrium volume of production. Disturbance of the balance of aggregate demand and aggregate supply. Mechanism of restoring equilibrium. Multiplier in the AD-AS model. The paradox of thrift. Modern theories of aggregate supply.

Topic 4. Classical and Keynesian model of macroeconomic equilibrium

Equilibrium of economic systems and the mechanism of its maintenance. Equilibrium of the market economy. Prerequisites and evolution of the development of the classical model of macroeconomic equilibrium. The classic model of macroeconomic equilibrium: the interaction of resource, commodity, money and investment markets. Hypotheses of the classical model of macroeconomic equilibrium. Resource market.

Labor as the main resource of the classical macro model. Equilibrium conditions of the labor market according to the classical model. The relationship between the labor market equilibrium graph and the production function. Determination of the equilibrium volume of production. The money market and its equilibrium. Equilibrium graph of the money market according to the classical model. Market of goods. Conditions and schedule of goods market equilibrium according to the classical model. Savings market. The impact of the interest rate on the savings market. Savings market equilibrium graph.

Basic provisions of the Keynesian model, its prerequisites. The problems of economic development are related to the lack of effective demand according to J.M. Keynes. Marginal propensity to consume. Marginal propensity to save. Aggregate demand function. Multiplier of autonomous costs. Multiplier effect. "Keynesian cross". A recessionary gap. Inflation gap. General equilibrium of the Keynesian macro model: a system of interconnected graphs.

Topic 5. Fiscal policy of the state

Content of fiscal policy: goals and tools. Tax revenues as the main source of state income. Direct and indirect taxes and their role in filling the budget. Principles of effective taxation.

State expenditures and their structure. Current and capital expenditures of the state. Discretionary fiscal policy. Stimulating and restraining fiscal policy. Models of the impact of government spending and taxes on the aggregate volume of production. Multiplier of government spending and tax multiplier. Balanced budget multiplier. Non-discretionary (automatic) fiscal policy. Progressive scale of taxation. Social transfers. Stabilizing effect on the economy of automatic fiscal policy in conditions of falling and growing production. Supply-side fiscal policy. Consequences of fiscal policy based on "aggregate demand - aggregate supply", "expenditure-output", "AD-AS" models. The impact of tax reduction on GDP according to the theory of supply economics. Fiscal policy and state budget. Concepts of balancing the state budget. The impact of fiscal policy and cyclical fluctuations on the state budget. Budget deficit: causes and economic consequences. State budget restriction. Cyclical and structural budget deficits. Sources of deficit financing. Issue and debt financing of the budget deficit. Public debt and its structure. Economic consequences of public debt. The effect of the state crowding out private investment and the burden of debt for future generations.

Topic 6. Monetary policy

Money market. Money supply and ways to measure it. Money supply and monetary base. Demand for money and factors that determine it. Baumol-Tobin money demand model. Mechanism of functioning of the money market.

The central (national) bank as a subject of monetary policy. Operations of the central (national) bank and the monetary base. Central bank tools: discount rate policy, bank reserve policy, open market operations. The mechanism of money creation by banks. The impact of monetary policy on the economy: the policy of "expensive" and "cheap" money. Transmission mechanism of monetary policy. Cash and deposit multipliers.

The essence of monetary policy. Discretionary and non-discretionary monetary policy. Monetary policy strategies. Targeting as a monetary policy strategy. Measures to stabilize the monetary system in transformation economies.

CONTENT MODULE 2. NATIONAL AND WORLD ECONOMY

Topic 7. Equilibrium of the national market in the IS-LM model

Aggregate expenses. Planned expenses, actual expenses. Graph "Keynesian cross". Establishing equilibrium in the commodity market without and with government intervention. Inflationary and deflationary (recessionary) gaps. The "withdrawal - injection" model. Spending multiplier. The Hicks-Hansen graph for the market of goods and paid services is the IS curve. Factors that affect the movement of the IS curve.

Market of money and securities. Money offer. Demand for money. Motives of demand for money: operational, speculative, prudence. Liquid trap. Investment trap. Equilibrium conditions in the market of money and securities. The Hicks-Hansen graph for the money and commodity market is the LM curve. Factors that affect the movement of the LM curve.

Labor market. Labor supply. Labor demand. Equilibrium conditions in the labor market. Real and nominal wages.

General equilibrium in the markets of goods and services, money and securities. The IS-LM model is an analytical tool for macroeconomic policy. Analysis of movement along curves and movement of curves in the IS-LM model. The influence of the state on the general equilibrium by means of monetary and fiscal policy. Application of the IS-LM model for the analysis of the economy of Ukraine.

Topic 8. Inflation and anti-inflation policy

Inflation as a macroeconomic phenomenon. Calculation of the rate of inflation. Classification of inflation: according to the level criterion; according to the form of manifestation; by the possibility of prediction and by the causes of occurrence.

Demand inflation based on the AD-AS model. Monetary and non-monetary factors of demand inflation. Premature and pure demand inflation. Inflation gap. Cost (supply) inflation based on the AD-AS model. Stagflation. Causes of cost inflation. Inflationary spiral. Theoretical approaches to explaining the causes of inflation. Keynesian and classical views on inflation.

Phillips curve and its modern interpretation! A monetarist explanation of the causes of inflation. Socio-economic consequences of predictable and unpredictable inflation. Inflation tax and seigniorage. Laffer curve for inflation tax. Inflation and real

interest rate dynamics. Fisher's principle. The state's anti-inflationary policy and its role in stabilizing the economy. Disinflation rate.

Peculiarities of anti-inflation regulation in transformation economies. Inflationary processes in Ukraine: causes, consequences and means of containment.

Topic 9. Unemployment and employment policy

Mechanism of functioning of the labor market. Factors affecting the ratio of supply and demand in the labor market. Unemployment as a deviation from equilibrium. Employment rate and unemployment rate. Types of unemployment: frictional, structural and cyclical. The actual and natural level of unemployment and the factors that determine it. Calculation of changes in GDP volumes under the influence of unemployment deviations from the natural level.

Keynesian explanation of unemployment. Unemployment gap as a result of inefficient demand. Neoclassical explanations of the causes of unemployment. Recommendations for overcoming unemployment from the point of view of various theoretical concepts. Economic and social consequences of unemployment. Oaken's law and curve.

The relationship between unemployment and inflation. Phillips curve. Means of state regulation of population employment. Demand policy and supply policy in regulating the labor market: advantages and effectiveness.

Social protection of the unemployed. Macroeconomic foundations of employment policy. Peculiarities of the labor market and unemployment in Ukraine.

Topic 10. Cyclic fluctuations

Macroeconomic instability and uneven economic development. Economic (business) cycles. Types of cycles. Theories of cyclic oscillations. Cyclic fluctuations and their types. Classification of macroeconomic variables for a typical business cycle: procyclical, anticyclical, acyclical. Macroeconomic analysis of cyclical fluctuations.

Cyclical, inflation and unemployment as manifestations of macroeconomic instability. Keynesian and neoclassical theory of economic cycles. Application of AD-AS and IS-LM models for analysis of cyclic fluctuations. The concept of real economic cycles by D. Kudlanl and E. Prescott. Equilibrium cyclic process of R. Lucas. The theory of cyclic oscillations M.I. Tugan-Baranovsky. Adaptation of the economy to cyclical fluctuations.

State countercyclical regulation. Peculiarities of the economic cycle in Ukraine. Macroeconomic dynamics.

Topic 11. Theory of economic growth

The essence of economic growth. Prerequisites and characteristic features of modern economic growth. Sources of economic growth. Economic growth rates. Factors restraining economic growth. Harod-Domar model of economic growth. R. Solow's model of economic growth. Steady state. The "golden" rule of capital accumulation. Theories of development: a comparative analysis.

Economic growth and economic development. State regulation of economic growth. Indicators of the level of economic development. Peculiarities of economic growth in Ukraine.

Topic 12. Theory of international trade

Mechanism of foreign economic policy. Instruments of foreign trade policy. Foreign investment. Comparative and absolute advantage.

International flow of goods and capital. The impact of foreign trade on GDP. The impact of net exports on GDP. The impact of the exchange rate on net exports. Foreign trade multiplier. Marginal propensity to import. The Mandela-Fleming model for an open economy. The IS-LM model for an open economy with a floating exchange rate. IS curve. Features of the LM curve in the coordinate system income - interest rate and income - exchange rate.

4. Program and structure of the course for:
complete full-time (part-time) form of study

Names of content modules and topics	Number of hours													
	Full-time form							Part-time form						
	weeks	total	including					total	including					
			l	p	lab	ind	self			l	p	lab	ind	self
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Content Module 1. Fundamentals of macroeconomic science and main indicators of the state														
Topic 1. Macroeconomics as a science	1,2	5	2	2	1									
Topic 2. Macroeconomic indicators and their measurement	3	5	2	2	1									
Topic 3. Model of aggregate demand and aggregate supply	4	8	3	3	2									
Topic 4. Classical and Keynesian model of macroeconomic equilibrium	5,6	8	3	3	2									
Topic 5. Fiscal policy of the state	7	7	3	3	1									
Topic 6. Monetary policy	8,9	7	3	3	1									
Total for content module 1		40	16	16	8									
Content Module 2. National and world economy														
Topic 7. Equilibrium of the national market in the IS-LM model	10	5	2	2	1									
Topic 8. Inflation and aninflation policy	11	5	2	2	1									
Topic 9. Unemployment and employment policy	12	7	3	3	1									
Topic 10. Cyclic fluctuations	13	8	3	3	2									
Topic 11. Theory of economic growth	14	5	2	2	1									
Topic 12. Theory of international trade	15	5	2	2	1									
Total for content module 2		35	14	14	7									
Total hours		75	30	30	15									

5. Practical class topics

№	Topic title	Number of hours
1	Topic 1. Macroeconomics as a science	2
2	Topic 2. Macroeconomic indicators and their measurement	2
3	Topic 3. Model of aggregate demand and aggregate supply	3
4	Topic 4. Classical and Keynesian model of macroeconomic equilibrium	3
5	Topic 5. Fiscal policy of the state	3
6	Topic 6. Monetary policy	3
7	Topic 7. Equilibrium of the national market in the IS-LM model	2
8	Topic 8. Inflation and disinflation policy	2
9	Topic 9. Unemployment and employment policy	3
10	Topic 10. Cyclical fluctuations	3
11	Topic 11. Theory of economic growth	2
12	Topic 12. Theory of international trade	2
		30

6. Independent work topics

№	Topic title	Number of hours
1	Topic 1. Macroeconomics as a science	1
2	Topic 2. Macroeconomic indicators and their measurement	1
3	Topic 3. Model of aggregate demand and aggregate supply	2
4	Topic 4. Classical and Keynesian model of macroeconomic equilibrium	2
5	Topic 5. Fiscal policy of the state	1
6	Topic 6. Monetary policy	1
7	Topic 7. Equilibrium of the national market in the IS-LM model	1
8	Topic 8. Inflation and disinflation policy	1
9	Topic 9. Unemployment and employment policy	1
10	Topic 10. Cyclical fluctuations	2
11	Topic 11. Theory of economic growth	1
12	Topic 12. Theory of international trade	1
		15

7. Samples of control questions, tests for assessing the level of knowledge acquisition by students.

1. Macroeconomics as a component of Economics. Economic system structure and the types.
2. Macroeconomic methods and principles of research.
3. Economic Models. Model of Resources, Products and Incomes Circulation:
4. The Main Macroeconomic indices: GDP, National income, Value added.
5. Aggregate demand (AD) and Aggregate supply (AS) Model.
6. The equilibrium of aggregate demand and aggregate supply in short-run and long-run period.
7. The Keynesian Cross Model.
8. Consumption and saving functions. Marginal propensity to consume.
9. The multiplier in the AD-AS model.
10. Investment Function and Accelerator principle.
11. The IS Curve and the way of its building.
12. The Money Market. Its components and equilibrium.
13. The LM Curve.
14. The Definition, the Functions and the Types of Money.
15. The Monetary System.
16. The Monetary Policy and its Effectiveness.
17. Business Cycle and economic fluctuations.
18. Models of economic cycles and State regulation of economic cycles.
19. Inflation: Its Causes, effects, and Social Costs.
20. Unemployment and its types.
21. Labor market and its equilibrium.
22. Hixs – Hansen model for three markets: goods, money and labor markets.
23. Economic growth and its factors.
24. Keynes' models of economic growth.
25. Neoclassical model of economic growth.
26. Fiscal policy and its Effectiveness.
27. Government Debt and Budget deficits.
28. The Balance of Trade and National Income: A Closed Economy and An Open Economy.
29. Macroeconomic Equilibrium in Open Economy. Mundel-Fleming Model.
30. International Capital Mobility.

Tests for assessing

1. The function of the central bank includes:

- 1 issue of money
- 2 setting the interest rate
- 3 lending to the population
- 4 ensuring the stability of the tax system

2. Economic growth is:

- 1 qualitative changes in production
- 2 quantitative changes in resources
- 3 quantitative and qualitative changes in resources
- 4 quantitative and qualitative changes in production, which are manifested in the final results

3. Natural unemployment is:

- 1 cyclical and voluntary
- 2 cyclic and frictional
- 3 frictional and structural
- 4 cyclical and structural

4. What is included in state expenditures (excluding double counting):

- 1 public procurement
- 2 payments to the government for purchased resources and goods
- 3 transfer payments
- 4 salaries of government officials
- 5 government transfers

5. Real cash (money) balances are:

- 1 cash money in circulation
- 2 cash on household current accounts
- 3 cash on current accounts of the business sector
- 4 stocks of means of payment, which economic subjects keep in the form of cash

6. The aggregate market value of final goods and services created in the country during the year is:

- 1 national wealth
- 2 gross domestic product
- 3 national income
- 4 pure economic well-being

7. Match the economic categories and their definitions

1. Inflation rate A. rate of change of inflation itself
2. Inflation rate B. disruption of the macroeconomic balance, as a result of which there is an increase in the general level of prices in the country
3. Inflation C. shows the change in prices in the economy

8. Match economic concepts and their content

1. Phillips curve A. Shows the relationship between the unemployment rate and the lag in GDP
2. Pigou effect B. Shows a certain combination of inflation and unemployment levels
3. Oaken's Law C. Describes the dependence of the volume of tax revenues on the average tax rate and the amount of income
4. Laffer curve D. When prices rise, the purchasing power of money decreases

9. Answer in one word:

A state budget in which expenditures exceed revenues is called _____.

10. Name the economic category:

_____ is a socio-economic phenomenon associated with an excess of the labor supply relative to the demand for it, the state of unemployment of a part of the economically active population.

11. Transfer payments are:

- 1 payments to households not conditioned by participation in the production process
- 2 part of the income, which is part of the national income
- 3 payments from the government to individuals
- 4 part of income, which is part of GDP

12. The material basis of small cycles is

- 1 need to renew the fixed capital
- 2 processes occurring in the money market
- 3 the need to update infrastructure facilities
- 4 processes taking place in the labor market

13. If taxes on business activity increase, then, other things being equal,

- 1 AD decreases, and AS remains unchanged
- 2 AD increases, and AS decreases
- 3 AC decreases, and AD remains unchanged
- 4 AD and AS decrease

14. Match the economic categories and their definitions

- | | |
|-----------------------|--|
| 1. Aggregate demand | A. the total amount of goods and services in the economy that can be offered by firms at a certain level of domestic prices |
| 2. Stagflation | B. is the total volume of domestic goods and services that households, firms, and the country's government, as well as economic agents of the rest of the world, are ready to buy at a certain level of domestic prices. |
| 3. Aggregate supply | C. a situation in the economy when the levels of inflation and unemployment are simultaneously rising against the background of a general decline in production |
| 4. Real interest rate | D. the rate that the borrower and lender expect at the time of concluding the agreement |

15. Match the economic categories and their definitions

- | | |
|-----------------------|--|
| 1. Budget deficit | A. excess of the structural deficit over the actual one |
| 2. structural deficit | B. budget deficit at current tax rates and the potential level of output |
| 3. Cyclical budget | C. government expenditures exceed revenues |
| 4. Cyclical deficit | D. difference between actual and structural budgets |

Tasks

Task 1.

The actual unemployment rate is 12%, and the natural rate is 6%.

The actual GDP is UAH 126 billion.

Determine the GDP loss from cyclical unemployment if the Oaken ratio is 2.5.

Task 2.

The natural rate of unemployment this year is 5%, and the actual rate is 7%.

Determine: the value of the relative gap between the actual GDP and the potential GDP

Task 3.

In the conditions of economic equilibrium, the actual GDP is UAH 500 billion, the potential GDP is UAH 650 billion, the propensity to save (c') is 0.19. Calculate the size of the recessionary gap if, during the period of its elimination, prices rise by 4%.

Task 4.

Marginal propensity to consume $MRS = 0.85$, marginal tax rate $t = 0.5$, marginal propensity to MPI = 0.5.

Calculate the value of the multiplier of aggregate costs.

Task 5.

The volume of commercial bank deposits is UAH 2 million. The rate of bank reserves is equal to 15%. In addition, the bank keeps another 5% of excess reserves from the amount of deposits.

What is the maximum amount that a commercial bank can use for issuing loans?

Task 6.

The economy model has the following indicators: GDP is 6,000 (gr. units); consumer spending - 3,500; public procurement - 1,050; export - 240; net export - 100; dividends - 20; depreciation amount - 200; indirect taxes - 800 (m.u).

Calculate: Volume of gross private investments 2) volume of imports 3) NGP

Task 7.

The table shows the economic parameters of the country:

Year	Money supply, million hryvnias	Speed of money circulation, revolutions/year	Price index, %
2017	1200	7,1	100
2018	1400	7,3	110
2019	1700	7,6	130

Determine the real and nominal GDP, the growth rate of nominal GDP in each year.

Task 8.

The table shows price indices by year.

Year	Price index	Inflation rate
1	105,00	
2	119,00	
3	130,40	
4	136,68	

- a) Calculate inflation topics (\hat{P}) for each year.
- b) Determine changes in real GDP in percent, if nominal income:
 1. in the second year, compared to the first, it increased by 19%.
 2. in the third year, compared to the second, it increased by 9%.
 3. in the fourth year, compared to the third, it increased by 7%.

Task 9.

The equilibrium volume of production is 8000 (gr. units), the AD curve is described by the equation $Y = 8300 - 3P$. Over a certain period of time, the equilibrium volume of production (Y) increased by 16%, and the aggregate demand equation AD took the form $Y = 9600 - 2P$. How did the general level of prices (P) and the real volume of production (Y) change?

Task 10.

Known data on the receipt of funds in the budgets of various entities of the national economy and their expenditures:

- 1) in households, the salary before taxes is 2010 (units); transfer payments - 200; direct taxes - 200; consumption expenses - 1210 (gr. un);
- 2) in the business sector, depreciation is equal to 60 (gr. un); retained earnings - 100; direct taxes - 50; dividends - 50; indirect business taxes - 50; business subsidies - 50 (gr. un);
- 3) state expenses amount to 500 (gr. un).

Define: a) household savings; b) gross private investments; c) volume of net investments; e) withdrawal; g) injections.

Task 11.

In 2020, the nominal GDP of country N was 320 billion dollars. USA, real GDP - 294 billion dollars. USA.

Calculate the value of real GDP in 2021, if it is known that the GDP deflator will increase by 15%, and the nominal GDP is expected to reach \$340 billion. USA.

Task 12.

In the country's macroeconomics, consumer spending at the beginning of the year amounted to UAH 135 billion. The annual growth rate of consumer spending was equal to 5%. The volume of public procurement is fixed and equal to UAH 39 billion. The function of investment costs depending on the interest rate has the form $I = 16 + 100/r$, where r is the value of the interest rate. Calculate the amount of GNP at the end of the year, if the interest rate is 20%, and net exports are 3 billion UAH.

Task 13.

Household consumption is characterized by the following data: the consumption function $C = 21 + 0.8 Y_d$, the tax rate is at the level of 12%, the total income is 450 billion UAH, subsidies - 56 billion UAH. Determine the amount of savings and the rate of consumption.

Task 14.

The country's economy is characterized by the following data (billion UAH):
 $Y = C + I + G$; $C = 110 + 0.8Y$; $I = 60$; $G = 60$.

Determine the equilibrium volume of GNP, the amount of consumption and savings.

Task 15.

The country's economy is characterized by the following data (billion UAH):

$Y = C + I + G$; $C = 120 + 0.7Y$; $I = 55$; $G = 65$.

Determine the equilibrium volume of national production (GDP), the amount of savings and consumption

8. Teaching methods.

When studying the discipline, the following teaching methods are used:

Depending on the source of knowledge: verbal (explanation, conversation, discussion, dialogue); visual (demonstration, illustration); practical (solving problems, business games).

According to the nature of cognitive activity: explanatory and visual problem presentation; partly search and research methods.

By place in educational activity:

- methods of organization and implementation of educational activities, combining verbal, visual and practical methods; reproductive and problem-searching; methods of educational work under the guidance of a teacher and methods of independent work of students of higher education;

- methods of control and self-control of educational activities: methods of oral and written control; individual and frontal, thematic and systematic control.

In the process of teaching an academic discipline, the following educational technologies are used to activate the educational and cognitive activity of students of higher education:

- working in small groups makes it possible to structure practical-seminar classes in terms of form and content, creates opportunities for the participation of each student of higher education in work on the topic of the class, ensures the formation of personal qualities and experience of social communication;

- seminars-discussions provide for the exchange of thoughts and views of the participants on a given topic, and also develop thinking, help form views and beliefs, the ability to formulate opinions and express them, teach to evaluate other people's proposals, to critically approach one's own views;

- brainstorming – a method of solving urgent tasks, the essence of which is to express as many ideas as possible in a limited period of time, discuss and carry out their selection;

- case method – a method of analyzing specific situations, which makes it possible to bring the learning process closer to the real practical activity of specialists and involves consideration of production, management and other situations, complex conflict cases, problem situations, incidents in the process of learning educational material;

- presentations – speeches in front of the audience, used to present certain achievements, results of the group's work, a report on the performance of individual tasks, instruction, demonstration.

9. Forms of assessment

According to the "Regulations on examinations and assessments at the National University of Bioresources and Nature Management of Ukraine", approved by the academic council of the National University of Bioresources and Nature Management of Ukraine on April 26, 2023, protocol No. 10, the types of knowledge control of higher education students are current control, intermediate and final attestation.

Current discipline control is carried out during practical classes and aims to check the level of preparedness of higher education applicants to perform specific work.

Intermediate attestation is conducted after studying the program material and should determine the level of knowledge of higher education students in the program material obtained during all types of classes and independent work.

The form of intermediate attestation is testing.

The assimilation of the program material by the student of higher education is considered successful, if its rating is at least 60 points on a 100-point scale.

Semester certification is conducted in the form of a semester exam.

Applicants of higher education are required to take exams and tests in accordance with the requirements of the working curriculum within the time limits provided by the schedule of the educational process. The content of the exam is determined by the working curriculum of the discipline.

10. Distribution of grades received by students. Evaluation of student knowledge is carried out on a 100-point scale and is converted to national grades according to Table 1 "Regulations and Examinations and Credits at NULES of Ukraine" (order of implementation dated 26.04.2023, protocol №10)

Student rating, points	National grade based on exam results	
	Exams	Credits
90-100	Excellent	Passed
74-89	Good	
60-73	Satisfactory	
0-59	Unsatisfactory	Not passed

In order to determine the rating of a student (listener) in the discipline R_{dis} (up to 100 points), the rating from the exam R_{ex} (up to 30 points) is added to the rating of a student's academic work R_{aw} (up to 70 points): $R_{dis} = R_{aw} + R_{ex}$.

11. Educational and methodological support.

1. Економікс: макроекономіка URL: <https://elearn.nubip.edu.ua/course/view.php?id=2361>
2. Базилевич В.Д. Макроекономіка: підручник. В.Д. Базилевич, К.С. Базилевич, Л.О. Баластрик. Київ: Знання. 2015. 694с.
3. Мікроекономіка і макроекономіка: Підручник. За ред. С. Будаговської. К.: Основи. 2011. 517с.
4. Макроекономіка та мікроекономіка: практикум. Навч. посіб. Київ. КПІ ім. Ігоря Сікорського. 2022. 88 с.
5. Макаренко М.І. Макроекономіка: підручник. 2-ге вид., переробл. Суми Сумський державний університет, 2021. 307 с.
6. Кібік О.М. Макроекономіка. Мікроекономіка: практикум. Редіна Є.В., Хаймінова Ю.В., Котлубай В.О., Примаченко І.Ф., Калмикова Н.Ю. Одеса, 2020. 76 с.
7. Макроекономіка. Практикум. Навчальний посібник О.Ф. Івашина, С.Ю. Івашина, Р.Ю. Олексієнко, І.О. Матвійчук. Дніпро: Університет митної справи та фінансів. 2019. 56 с.
8. Макроекономіка. Підручник для України. Переклад з англійської. Наукова редакція перекладу С. Панчишина. Київ: ОСНОВИ. 2000. 575 с.
9. Макроекономіка: практикум. Навчальний посібник. Ящишина І.В., Буторіна В.Б., Боднарчук Т.Л. Кам'янець-Подільський: Видавець Ковальчук О.В.. 2021. 172 с.

12. Recommended sources of information

1. Аналітична економіка: макроекономіка і мікроекономіка. Підручник. За ред. С. Панчишина і П. Островерха. Львів. Апріорі. 2020.
2. Макроекономіка: базовий курс: навч. посіб. І.Й. Малий, проф. І.Ф. Радіонова, доц. Т.Ф. Куценко, доц. Н.В. Федірко та ін. К.: КНЕУ. 2016. 254 с
3. Гронтовська Г. Макроекономіка. Навчальний посібник. К.: ЦУЛ. 2019. 672 с.
4. Гронтовська Г., Косік А. Макроекономіка: практикум. К.: ЦУЛ. 2019. 400 с.
5. Базилінська О. Макроекономіка. Навчальний посібник. К.: ЦУЛ. 2019. 442 с.
6. Макроекономіка. Практикум: навчальний посібник. О.Ф. Івашина, С.Ю. Івашина, Р.Ю. Олексієнко, І. О. Матвійчук. Дніпро: Університет митної справи та фінансів, 2019. 56 с.
7. Гронтовська Г., Косік А. Макроекономіка. Практикум. Центр учбової літератури. 2020. 400 с.

Electronic (Information resources)

1. Макроекономіка: базовий електронний текст лекцій. Малий І.Й., Радіонова І.Ф., Куценко Т.Ф., Федірко Н.В. та ін. К.: КНЕУ. 2017. 200 с. URL: https://kneu.edu.ua/userfiles/Faculty_of_Economics_and_Administration/kmdu%20fetau/2017/Macro_e-lectures_2017_.pdf
2. Макроекономіка: Курс лекцій: Навчальний посібник для дистанційного навчання . За ред. В. В. Кириленка. Тернопіль: „Економічна думка”, 2008. 250с. URL: <http://dspace.wunu.edu.ua/bitstream/316497/28895/1/%d0%9a%d1%83%d1%80%d1%81%20%d0%bb%d0%b5%d0%ba%d1%86%d1%96%d0%b9%20%d0%b7%20%d0%9c%d0%b0%d0%ba%d1%80%d0%be%d0%b5%d0%ba%d0%be%d0%bd%d0%be%d0%bc%d1%96%d0%ba%d0%b8.pdf>
3. Макроекономіка. Навч. Посібник. За ред.. Г.М. Пилипенко. – 3-тє вид. перероб. і доп. Д.: Національний гірничий університет, 2009. 193 с. URL: <https://ep.nmu.org.ua/ua/files/%D0%9C%D0%B0%D0%BA%D1%80%D0%BE%D0%B5%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D1%96%D0%BA%D0%B0%202009.pdf>
4. Макроекономіка: Методичні поради та плани практичних занять для студентів економічного факультету. За ред. С.М. Панчишина та П.І. Островерха. Вид. 8-е, перероб. та доп. Львів: ЛНУ імені Івана Франка, 2018. –132 с. URL: https://econom.lnu.edu.ua/wp-content/uploads/2016/10/%D0%9C%D0%B0%D0%BA%D1%80%D0%BE%D0%B5%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D1%96%D0%BA%D0%B0_2018-for-I-E.pdf
5. Макроекономіка: базовий електронний текст лекцій. Укладачі: проф. Малий І.Й., проф. Радіонова І.Ф., доц. Куценко Т.Ф., доц. Федірко Н.В. та ін. К.: КНЕУ. 2017. 200 с. URL: http://feu.kneu.edu.ua/ua/depts4/mdu/disciplines_of_bachelor_level_mdu/macroeconomics/
6. Mankiw Macroeconomics URL: <https://www.studocu.com/row/document/bangladesh-university-of-professionals/principles-of-microeconomics/solution-manual-mankiw-macroeconomics-pdf/20512034>
7. Macroeconomics URL: <https://www.bu.edu/econ/files/2014/08/DLS1.pdf>
8. Macroeconomics URL: https://web.stanford.edu/~johntayl/2016_pdfs/Final-TOC-from-Elsevier
9. Macroeconomics URL: <https://www.khanacademy.org/economics-finance-domain/macroeconomics>