

to the Order of March 23, 2023 № 244

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

Department of economic theory

“CONFIRMED”

Dean of the Faculty (Director of Institute)

_____ Ostapchuk A.D.

“ ____ ” _____ 2023

“APPROVED”

at the meeting of the department of economic theory

Protocol №_9_ dated “_12_”_05_2023

Head of Department

_____ Talavyrya M.P.

”REVIEWED ”

Program Coordinator__ Management__

Program Coordinator

_____ Lutsiak V.V.

PROGRAM OF THE COURSE

ECONOMICS: MACROECONOMICS

Specialization	073 Management
Educational program	Management
Faculty (Institute)	Agrarian Management
Developers:	Ph. D, Associate Professor Gushcha I.O. (position, academic degree, academic title)

Kyiv – 2023

1. Description of the course

ECONOMICS: MACROECONOMICS

Field of knowledge, specialization, educational program, educational degree		
Educational degree	Bachelor's	
Specialization	073 Management	
Educational program	Management	
Characteristics of the course		
Type	Compulsory	
Total number of hours	150	
Number of ECTS credits	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	Part-time form of study
Course (year of study)	1	
Semester	2	
Lecture classes	45 hr.	
Practical, seminar classes	45 hr.	
Laboratory classes	-	
Self-study	60 hr.	
Individual assignments	-	
Number of weekly classroom hours for the full-time form of study	6 hr.	

2. Purpose, objectives, and competencies of the course

Economics develops an understanding of economic theory evolution, terminology and principles, concepts used in the study of the subject. This course unites the political and the economic in the production, exchange, consumption, and reproduction of valued resources and goods. Learners study works and views of the political economists of different countries. The course is formed on the basis of modern world and domestic methods of studying Economics. It will help to understand how to evaluate economic growth, inflation level, unemployment. The main tools of fiscal and monetary policy will be researched. This course will cover short-run business cycle and stabilization policy and long-run topics, such as economic growth, the natural rate of unemployment, persistent inflation, and the effect of government debt. The topics are formed in accordance to Keynesian and classical theories for the macroeconomic modelling with aggregate demand and aggregate supply model, Keynesian cross, IS-LM model. Case studies with the real-world data and events help to apply macroeconomic theoretical approaches for the economic thinking of students.

There are the main goals of the course:

- to develop logical intellection in general level of economy
- to analyze economic events and public policies formation by various models
- to give ideas about economic policy and globalization

Objectives

- to evaluate economic effectiveness and national economic indexes
- to analyze economic relations and economic events
- to learn economic categories and economic laws

Acquisition of competencies:

Integrated competency (IC):

The ability to solve complex specialized tasks and practical problems, which are characterized by complexity and uncertainty of conditions, in the field of management or in the learning process, which involves the application of theories and methods of social and behavioral sciences.

IC 3. Ability to abstract thinking, analysis, synthesis.

IC 10. Ability to conduct research at an appropriate level.

General competencies (GC):

GC 1. The ability to define and describe the characteristics of the organization.

GC 3. The ability to determine the prospects for the organization's development.

GC 11. Ability to create and organize effective communications in the management process.

Program learning outcomes (PLO):

PLO 5. Describe the content of the functional areas of the organization.

PLO 18 Demonstrate the ability to identify prospects for the development of the enterprise, develop projects, organize management of business processes based on analysis market opportunities and international business environment.

3. Program and structure of the course for:

- complete full-time (part-time) form of study;

Program of the course

MODULE 1

BASES OF MACROECONOMIC SCIENCE AND BASIC INDEXES OF STATE

Topic 1. Macroeconomics as science

Entering is into macroeconomics. A place of macroeconomics is in the system of economic sciences. Contradiction between public necessities and economic resources is a main problem of society. Efficiency of economy and main task of macroeconomics. Object and article of macroeconomics. Economic system as object of macroeconomics. Subjects of economy. Mechanism of functioning of economy as article of macroeconomics. Positive and normative functions of macroeconomics. Macroeconomics and economic policy. Method of macroeconomics. Design as basic method of macroeconomic analysis. Suppositions, exogenous and endogenous variables of macroeconomic models. Supplies and streams as two types of quantitative variables.

Topic 2. Macroeconomic indicators and their measurement

System of national calculations as normative base of the macroeconomic accounting. Methodological principles of construction of system of national calculations. Basic categories of system of national calculations: institutional units, sectors, accounts, economic operations. Basic macroeconomic indexes. Gross issue and gross domestic product (GNP). Methods of calculation of GNP: production, eventual use, distributive. A gross national receipt and gross national receipt is present. Macroeconomic indexes are on clean basis. Nominal and GNP is real. Current and permanent prices. Price index (deflator of GNP). Inflation and deflation GNP. Determination of change of the real GNP at stable prices and in the conditions of inflation.

Topic 3. 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. Salary, unemployment and inflation. The 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 4. Model of aggregate demand and aggregate supply

An economic rotation is in the conditions of clean market. Structure of model of economic rotation. Cooperation between households and enterprises at the market of resources and at the market of products. A role of financial mediators is in an economic rotation. Aggregate demand. Essence of the combined demand and his difference is from one-commodity demand. aggregate demand curve. Price factors of the aggregate demand. Non price factors of the aggregate demand and influence of them are on his curve. Aggregate supply. Essence of aggregate supply. Classic model of aggregate supply and production function. A curve of aggregate supply is in long-term period. Keynesian's model of aggregate supply. A curve of aggregate supply is in a short-term period, price and real GNP change on the different areas of short-term curve of aggregate supply. Non price factors of aggregate supply. The combined demand is an aggregate supply as model of economic equilibrium. Long-term and short-term equilibrium. Violation of double equilibrium by the combined demand and mechanism of its renewing. Violation of double equilibrium by an aggregate supply and mechanism of its renewal.

Topic 5. Classical 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.

Topic 6. Keynesian model of macroeconomic equilibrium

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. Determination of the equilibrium volume of production. Money market and its balance. Equilibrium graph of the money market according to the classical model. Market of goods. Conditions and schedule of the equal classical market of goods by model. Savings market. The impact of the interest rate on the savings market. Savings market equilibrium graph. The general equilibrium of the classical macromodel: a system of interconnected graphs.

MODULE 2

NATIONAL AND WORLD ECONOMY

Topic 7. Fiscal policy

Discretionary fiscal policy. Stimulant and retentive fiscal policy. Maximum coefficient of taxes and difficult Multiplier of charges. Multiplier of taxes. Multiplicative influence of the public purchasing and clean taxes is on the real GNP. Multiplier of the balanced budget.

Automatic fiscal policy. Automatic clean taxes as stabilizers are mounted. Stabilizing influence is on the economy of automatic fiscal policy in the conditions of falling and growth of production. An effect of braking of automatic fiscal policy is a that necessity of its addition a discretionary policy.

A fiscal policy is taking into account suggestion. Consequences of fiscal policy on the basis of model the «combined demand is an aggregate supply». Influence of decline of taxes is on GDP in obedience to the theory of economy of suggestion. Consequences of stimulant of tax policy are for the state budget. Laffer's curve about dependence between tax rates and tax entering budget.

Fiscal policy and the state budget. Influence of fiscal policy and cyclic vibrations is on the state budget. Actual, potential and cyclic budgetary balance. An estimation of fiscal policy is in the conditions of full and incomplete employment. Contradiction is between the stabilizing and

budgetary functions of fiscal policy. Conceptions of balanced of the state budget. Sources of financing deficit. National debt and effects of expulsing. Emission financing of budgetary deficit and his consequences.

Topic 8. Monetary policy

Money market. Money supply and ways to measure it. Money supply and monetary base. Demand for money and factors that determine it. 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. Monetary policy strategies. Rules for conducting monetary policy. The problem of the effectiveness of monetary policy. Consequences of monetary policy according to the IS-LM model. Coordination of monetary and fiscal policy in the IS-LM model. NBU and monetary policy in Ukraine. Measures to stabilize the monetary system in transformation economies. The problem of trust in money and monetary policy.

Topic 9. National market equilibrium in the IS-LM model

Market of goods and paid services. The "consumption-output" model is a Keynesian model of the commodity market. Closed economy. 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 10. Labour-market and social policy

Labour-market and mechanism of his functioning. Demand, suggestion and cost of labour force. Classic theory of labour-market. Keynesian's theory of labour-market. Theory of flexible labour-market. Public policy of employment. Stimulant policy of politician as a method of diminishing of unemployment and it inflationary consequences. Fillips curve of about connection between inflation and unemployment in short-term and long-term periods. Conclusions of Fillips curve of are for the policy of employment. Government programs of assistance employment of population. Economic inequality and policy of social defence of population. Loren's curve of as graphic model of actual allocation of profits. Factors which predetermine inequality in primary profits. Poverty and living wage. State system of social defence of population: social guarantees, social help, social security.

Topic 11. Cyclical fluctuations and economic growth

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. Macroeconomic analysis of cyclical fluctuations. Cyclicity, inflation and unemployment as manifestations of macroeconomic instability. Keynesian and neoclassical theory of economic cycles. Application of AD-AS and IS-LM models for the analysis of cyclic fluctuations. State countercyclical regulation. Peculiarities of the economic cycle in Ukraine. Macroeconomic dynamics. The essence of economic growth. Prerequisites and characteristic features of modern economic growth. Sources of economic growth. Methods of calculating sources of economic growth. Scientific and technical progress. Sources of economic growth of Ukraine. Economic growth rates. Factors restraining economic growth. Macroeconomic policy of stimulating economic growth. Modeling of economic growth. Economic

growth based on the IS-LM model and the production possibilities curve. Harod-Domar model of economic growth. R.Solow's model of economic growth. The "golden" rule of capital accumulation. 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. Mechanism of foreign economic activity

Balance of payments. Account of current operations and his constituents. Account of capital operations and his maintenance. Essence and role of the autonomous article of «Error and omission». Reserve assets as regulative pay balance sheet item. Model of balance of payments. Rate of exchange. Forms of quotation of rate of exchange. Types of rate of exchange are depending on the mode of his forming. One-sided and multilateral rate of exchange, nominal and the rate of exchange is real. Parity of purchasing power. Demand and supply as factors of rate of exchange. Connection of rate of exchange is with balance of payments. The currency systems are in development. Influence of foreign trade is on GNP. An economic equilibrium is in the conditions of open economy. Net export as component of the combined charges. Marginal propensity to the import and difficult multiplier of charges. Multiplicative influence of net export is on GNP.

Structure of the course

Names of content modules and topics	Number of hours												
	Full-time form							Part-time form					
	week s	total	including					to ta l	including				
			l	p	lab	in d	sel f		l	p	lab	in d	sel f
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Content Module 1. BASES OF MACROECONOMIC SCIENCE AND BASIC INDEXES OF STATE													
Topic 1. Macroeconomics as science	1	13	4	4			5						
Topic 2. Macroeconomic indicators and their measurement	2,3	13	4	4			5						
Topic 3. Inflation and anti-inflation policy	4	13	4	4			5						
Topic 4. Model of aggregate demand and aggregate supply	5,6	13	4	4			5						
Topic 5. Classical model of macroeconomic equilibrium	7	13	4	4			5						
Topic 6. Keynesian model of macroeconomic equilibrium	8	11	3	3			5						
Total for content module 1			23	23			30						
Content Module 2. NATIONAL AND WORLD ECONOMY													
Topic 7. Fiscal policy	9,10	13	4	4			5						
Topic 8. Monetary policy	11	13	4	4			5						

Topic 9. National market equilibrium in the IS-LM model	12	13	4	4			5						
Topic 10. Labour-market and social policy	13	11	3	3			5						
Topic 11. Cyclical fluctuations and economic growth	14	11	3	3			5						
Topic 12. Mechanism of foreign economic activity	15	13	4	4			5						
Total for content module 2			22	22			30						
Total hours	150		45	45			60						
Course project (work) on _____			-	-	-		-		-	-	-		-
(if included in the curriculum)													
Total hours	150		45	45			60						

4. Seminar topics - not planned

5. Practical class topics

№	Topic title	Number of hours
1	Macroeconomics as science	4
2	Macroeconomic indicators and their measurement	4
3	Inflation and anti-inflation policy	4
4	Model of aggregate demand and aggregate supply	4
5	Classical model of macroeconomic equilibrium	4
6	Keynesian model of macroeconomic equilibrium	3
7	Fiscal policy	4
8	Monetary policy	4
9	National market equilibrium in the IS-LM model	4
10	Labour-market and social policy	3
11	Cyclical fluctuations and economic growth	3
12	Mechanism of foreign economic activity	4
	Total	45

6. Laboratory class topics - not planned

7. Independent work topics

№	Topic title	Number of hours
1	Macroeconomics as science	5
2	Macroeconomic indicators and their measurement	5
3	Inflation and anti-inflation policy	5
4	Model of aggregate demand and aggregate supply	5
5	Classical model of macroeconomic equilibrium	5
6	Keynesian model of macroeconomic equilibrium	5
7	Fiscal policy	5

8	Monetary policy	5
9	National market equilibrium in the IS-LM model	5
10	Labour-market and social policy	5
11	Cyclical fluctuations and economic growth	5
12	Mechanism of foreign economic activity	5
	Total	60

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

NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENT SCIENCES OF UKRAINE			
Educational degree "Bachelor" Specialities: "Marketing" "Management"	Faculty of agrarian management Department of Economic theory 2022 – 2023 academic year	EXAM TICKET № 1 on discipline Economics: Macroeconomics	"APPROVED" Head of the Department
			(signature) Talavyria Mykola May 12, 2023
<i>Questions for Exam</i>			
1. National market and its equilibrium (10 points)			
2. Task (10 points).			
Tests (10 points)			
1. Macroeconomics probes economic processes at level:			
1. enterprises;			
2. industries of production;			
3. separate market;			
4. national economy.			
2. Which of the following corresponds to the features of the administrative command system?			
1. state ownership of means of production;			
2. centralized production planning and management;			
3. collective private and state property;			
4. predominance of small-scale production;			
5. monopolization and bureaucratization of the economy.			
3. Give the correct definition			
All expenses that directly contribute to the increase of the total amount of capital in the economic system are _____.			
4. Give the correct definition			
The aggregate value of goods and services produced in the country during the year is _____.			
5. Find the appropriate definitions for the following terms:			
1. is set in the prices of goods and services, their size for an individual payer does not directly depend on his income;			
2. monetary remuneration for the work of workers and employees, which includes additional payments for social security, social insurance, payments from private pension funds;			
3. the equivalent of the depreciation of the fixed capital for the year;			
4. determines the rental income received by households for leased land, premises, housing, etc.			
A. wage;			
B. rent;			
C. indirect tax;			
D. amortization.			
6. Derive income divided by:			
1. consumption.			
2. savings.			

3. payment of taxes
4. profit.
7. Find the correct calculations that correspond to these indicators:
1. invest multiplier
2. MPC
3. APC
4. accelerator
A. $c = C / Y$;
B. $c' = \Delta C / \Delta Y$;
C. $b = \Delta Y / \Delta K_0$;
D. $m = 1 / (1 - c')$.
8. Suppose, the marginal propensity to consume is 0.5, what is the value of the multiplier?
1. 0,25
2. 0,5
3. 1
4. 5
5. 2
9. Give the correct definition
Which curve shows the relationship between tax rates and the amount of tax revenue?
10. Investment demand depends on:
1. quantity of production
2. the level of differentiation of population by incomes
3. cyclical fluctuations of the economy
4. capital expenditures
5. APC & MPC

Tasks for the exam

Task 1. Using the data of the table find: GNP, consumption, NNP, net private investments.

Indicators	1 st year	2 nd year
The value of new building	7	7
The value of produced equipment	14	14
The value produced consumption goods	154	126
The value of goods, that have been consumed	126	154
Amortization of building	14	14
Amortization of equipment	14	14
Stock of consumption goods at the beginning of year	42	70
Stock of consumption goods in the end of year	70	42

Task 2. Using the data of the table find: the builders' contribution in the creation of GNP. How to avoid double accounting while measuring GNP? Determine “add value” and explain ways of its calculation.

Production	Final sum of sale (n.m.u.)	Buying of commodities that are necessary for productions
Building	20000	—
Glass	500	200
Bricks	12000	4000
Paints	420	0
Other	3080	4300

Task 3. What should the equilibrium amount of production of goods be to cause demand on autonomous investment in the dimension of 120 n.m.u., if autonomous consumption is 30 n.m.u. and marginal propensity to consumption is 0,4?

Task 4. Using the data of the table find: GNP (by the incomes and by the costs), personal income, ended communion profit, the quantity of net export.

1	Export	550,5
2	Dividends	90
3	Amortization	460,5
4	Wage	2163
5	State purchasing of goods & services	1865,5
6	Rent	49,5
7	Indirected taxes	385,5
8	Additional payments to wage	420
9	Gross private investments	1113,5
10	Taxes & incomes of the corporation	132
11	Transfer payments	480
12	Interest rate	301,5
13	Income of individual owner's	198
14	Consumption expenditure	2782,5
15	Import	507
16	Social insurance payments	222
17	Non-distribute profit	825
18	Personal income taxes	558

Task 5. Using the following data (in n.m.u.) calculate macroeconomic indicators write them down into the table. Find the investment multiplier.

$$C=200+0,75Y_{DI}, I=200, E=125, Z=25, T=G=200$$

National income	Taxes	Derive income	Consumption	Investments	State expenditure	Net export	AD
1800							
2000							
2200							
2400							
2600							

Task 6. The data in the table characterize close economy that function at constant price level and absence of the state intervention. Calculate: marginal propensity to consumption, marginal propensity to savings and investment multiplier.

Real NNP	Consumption costs	Savings	Planned investments	Total costs	Deflection of real investments from scheduled
1300	1290	10	22		
1310	1298	12	22		
1320	1306	14	22		
1330	1314	16	22		
1340	1322	18	22		
1350	1330	20	22		
1360	1338	22	22		

1370	1346	24	22		
1380	1354	26	22		
1390	1362	28	22		
1400	1370	30	22		

Task 7. The consumption function is $C = 200 + 0,6Y$; $I = 500$. Find the equilibrium NI and its variation while investments increase on 100 n.m.u.

Task 8. The savings function is $S = -20 + 0,4Y$; $I = 20$ n.m.u. Find: the equilibrium NI multiplier and the quantity of savings.

Task 9. The behavior of macroeconomics subjects is characterized with the following data: $C = 0,8Y^V + 90$; $I = 0,225Y + 30$; $G = T$; $E = 180$; $T(Y) = 0,375$; $Z(Y) = 0,2$. Find the equilibrium NI.

Task 10. Using the data of the table calculate average and marginal tax rates. What is the form of the tax: progressive; proportional, regressive?

Income	Tax	Average tax rates	Marginal tax rates
0	0		
50	5		
100	15		
150	30		
200	50		
250	75		

Task 11. The national economy is characterized with the following data: real income is 4000 n.m.u., marginal propensity to consumption is 0.8; equilibrium income is 4200 n.m.u. How should governmental costs and the amount of tax incomes change, so that economy achieves equilibrium if other data are stable?

Task 12. The economy of Ukraine is in equilibrium if consumption of households is determined by the function $C = 100 + 0,8Y^V$, the investments 100, state expenditures on buying of goods are 200, transfer payments from the budget are 62,5, rate of profit tax is 0,25. Find the equilibrium NI and multiplier.

Task 13. The leading economists forecast that in a year economic situation in country will be characterized with the following data: $C = 100 + 0,7Y$; $I = 100$ n.m.u.; $G = 200$ n.m.u.; $Z(Y) = 0,2$. Calculate a forecasted level of GNP.

Task 14. Using the data of the table find the quantity of currency aggregate M_1 , M_2 , M_3 .

Indicators	n.m.u.
Short term payments	1630
Long term payments	645
Check payments	448
Non-check saving payments	300
Cash	170

Task 15. Liabilities of the commercial bank's balance include (in mln. n.m.u.): payments poste restate – 1000; term payments – 500. standard of reserve reimburse of payments poste restate – 30%, and standard of reserve reimburse of term payments – 20%. On what sum can the bank increase credits if a half of payments poste restate will be re-legalize into term payments?

Task 16. The level of real unemployment is 10%, of nature is 6%. Real GNP is 200 mln. grn. Find losses of GNP because of the cyclic unemployment.

Task 17. Find deflation rate if price index of 2006 is 98%, 2005 is a basic year.

Task 18. Find price increment if price indexes of 2007 are 128%, 2005 is a basic year.

Task 19. Find inflation rate during 2000-2007 if 2005 is a basic year and price index of 2000 is 25%.

Task 20. Deposits of commercial banks are 4 mlrd. grn. The norm of obligatory stocks is 25%. On what quantity may currency supply increase if the Central Bank decides to decrease the norm of obligatory stocks?

Task 21. The norm of obligatory stocks is 12%, accessed stocks are 3% of the sum of deposits. What is the quantity of deposits if the total sum of stocks is 45 bln. grn., and cash is 150 bln. grn.?

Task 22. In closed economic system without state intervention the amount of savings of the n^{th} year is determined with their formula $S_n = Y_{n-1} - 160$, annual autonomous investments are 400 n.m.u. At such circumstances the dynamic equilibrium is fixed at $Y_{n-2} = 1600$ n.m.u. Find: the equilibrium NI in the $(n-1)^{\text{th}}$ year; an increasing rate of NI; NI of the n^{th} year if an increasing rate is constant.

Task 23. In the economy of a certain country it is considered reasonable to have production stocks of 2.5 n.m.u. per each n.m.u. of the quantity of sale in the end of every year. Using the data of the table calculate unknown indicators and write them down.

Year	The quantity of sale	Stocks at the beginning of the year	Expected stocks in the end of the year	The quantity of production of the year
n+1	40	100		
n+2	50			
n+3	60			
n+4	55			
n+5	50			

Task 24. In the state A an inflation rate is 9%, and in the country B it is 5%. In A interest rate is 12%. What should interest rate be in B to avoid pouring of the capital among these countries.

9. Teaching methods.

Forms and educational methods - lectures, practical classes, independent work by students of the course.

10. Forms of assessment

Criteria for assessment of learning tasks is one of the main ways to test knowledge and skills of students with discipline "Economics: Macroeconomics". In assessing the objectives as a basis should take the completeness and correctness of their implementation. Please note the following competencies and skills of students:

- differentiate, integrate and unify knowledge;
- teaching material logically and sequentially;
- use additional literature.

Calculations rating of discipline " Economics: Macroeconomics" The study of the history of economic doctrines in your curriculum include one academic semester: Lectures – 45 hours, Practical training - 45 hours. and independent work - 60 hours., for a total of 150 hours. (5 credits ECTS). After the study subjects scheduled exam. Duration academic semester - 15 weeks. Current rating of subjects is 100 points. Top of the study - 70 points, ranking of certification - 30 points

11. 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)

Rating evaluation of semantic modules

Duration of training, weeks	Most meaningful module	Workload, hours	Credit and ECTS	Rating score semantic module scores	
				min	max
1-7	1	60	2,5	60	100
8-15	2	60	2,5	60	100
Total	2	150	5	42	70,0

Top with additional work R_{aw} is 10 points. Rating the penalties R_p is 5 points. Top student for educational work R_{ew} is expressed by:

$$R_{ew} = \frac{0,7 \times (R^{(1)}_{bm} \times K^{(1)}_m + R^{(2)}_{bm} \times K^{(2)}_m)}{K_D} + R_{aw} - R_p, \quad (1)$$

where $R^{(1)}_{bm} \dots R^{(2)}_{bm}$ – the ratings given to the content modules on a 100-point scale;
 n - number of content modules;

$K^{(1)}_m K^{(2)}_m$ - the number of ECTS credits under official curriculum for the relevant contents of the module;

$K_D = K^{(1)}_m + K^{(2)}_m$ - number of credits ECTS, provided a working curriculum for discipline in the current semester;

R_{aw} , R_p - in accordance with additional work and penalties work.

$$R_{ew} = \frac{0,7 \times (R^{(1)}_{bm} + R^{(2)}_{bm})}{4} + R_{aw} - R_p,$$

Students who had taken out educational work 60 or more points may not be an exam, and get test scores "automatically," according to the typed number of points transferred to the national evaluation of ECTS in accordance with table 1. in this case the top student in the discipline equal to his rating on education.

Rd = Raw

A student wants to improve your rating and improve the assessment of discipline, it must pass certification semester. The latter will definitely pass students who for academic work took less than 60 points. For admission to the certification a student must score at least 60 points from each module contents and in general - not less than 42 points for academic works.

Top student certification R_{at} is determined on a 100-point scale. If the certification of courses a student took less than 60 points, they will not count against him - not added to the collected points for academic work and student remains rating (score) defined by formula (1).

Otherwise, the top student in the discipline determined R_d calculated formula:

$$R_d = R_{aw} + 0,3 \times R_{AT} \quad (2)$$

Rate of student discipline is translated into the national assessment and evaluation of ECTS in accordance with table.

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
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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): $R_{dis} = R_{aw} + R_{ex}$.

12. Educational and methodological support.

1. Електронний навчальний курс з дисципліни Economics: Macroeconomics. URL: <https://elearn.nubip.edu.ua/course/view.php?id=392>
2. Macroeconomics: Educational-scientific manual for students of economic specialties. Методичні вказівки// I. Guscha. К.: НУБіП України. 2020. 165 с. URL: https://nubip.edu.ua/sites/default/files/u327/metodichka_economics_macro_2022.pdf
3. Economics: Macroeconomics and macroeconomic policy. Mykola Talavirya, Gushcha I.O., Paschenko O.V., Yarema Lubov, Yana Voitovska, Vdovich Valentina. Publisher Teadmus OÜ, Tallinn, Estonia. – 2022. – 352 p.
4. Talavirya M., Paschenko O., Gushcha I. Macroeconomics: Aggregate Theory and Policy. – Kyiv, CP Komprint, 2023. -215 p.
5. Макроекономіка. Методичні вказівки для підготовки фахівців ОС «Бакалавр» за спеціальностями 051 Економіка (Економіка підприємства), 051 Економіка (Економіка підприємства), 071 Облік і оподаткування (Облік і аудит), 072 Фінанси, банківська справа та страхування (Фінанси і кредит), 073 Менеджмент, 075 Маркетинг, 076 Підприємництво, торгівля та біржова діяльність // Гуща І.О.// – К.: НУБіП України, 2020, 97 с. URL: https://nubip.edu.ua/sites/default/files/u327/metodichka_makro_gushcha_2020.pdf
6. Макроекономіка в тестах і задачах: Навчальний посібник для самостійної роботи студентів вищих навчальних закладів IV рівня акредитації: Навч. посіб., Київ: ФОП Ямчинський О.В., 2023 – 345 с.
7. Economics: macroeconomics. Методичні вказівки (англійською мовою) для самостійної роботи студентів економічних спеціальностей // I. Guscha // К.: НУБіП України, 2023.
8. Талавиря М.П., Бутенко В.М., Болгарова Н.К., Власенко Ю.Г., Гуща І.О., Пащенко О.В. Економікс: навчальний посібник. Київ: Редакційно-видавничий відділ НУБіП України. 2023. 532 с.

13. Recommended sources of information

1. Government Portal. URL: <http://www.kmu.gov.ua/control/en>
2. European Union. URL: <http://www.europa.eu.int/>
3. The World Bank. URL: <http://www.worldbank.org/en/topic/macroconomics>
4. State Statistic Service of Ukraine: URL: <http://www.ukrstat.gov.ua/>
5. Verkhovna Rada of Ukraine: URL: <http://rada.gov.ua>
6. National Bank of Ukraine: URL: <http://www.bank.gov.ua>.
7. National Library of Ukraine. URL: <http://www.nbuv.gov.ua/http://www.nbuv.gov.ua/>
8. Food and Agricultural Organization of the United Nations. URL: <http://www.fao.org/>
9. World Trade Organization. URL: <http://www.wto.org>
10. [Glossary of Political Economy Terms](#), by Professor Paul M. Johnson [Glossary of Budget and Economic Terms](#), U.S. Congressional Budget Office [Dictionary of Finance and Investment Terms](#), by Jerry White and Jordan Goodman
11. Macroeconomics in New World Encyclopedia. URL: <http://www.newworldencyclopedia.org/entry/Macroeconomics>