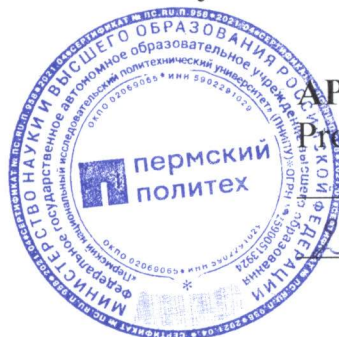


Ministry of Science and Higher Education of the Russian Federation

Federal State Autonomous Educational Institution of Higher Education
Perm National Research Polytechnic University



APPROVED BY

Pro-rector for Academic Affairs

N.V. Lobov
N.V. Lobov

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ACADEMIC COURSE WORKING PROGRAM

Academic course: Economics
(Name)

Form of education: Full-time
(Full-time /full-time - correspondence/correspondence)

Level of higher education: Bachelor's program
(Bachelor's program/specialist program/Master's program)

Workload in hours (in credits): 144 (4)
(Hours (CU))

Training program (degree): 15.03.06 Mechatronics and Robotics
(Code and denomination of degree)

Direction: Mechatronics and Robotics
(Title of curriculum)

1. General Provisions

1.1. Goals and Objectives of the Course

The goal of the course is to form the ability to concretize tasks and select optimal solutions for ensuring the progressive activity of economic entities based on the application of basic economic knowledge and economic analysis.

1.2. Prescribed Objects of the Course

economic system; resource market(microeconomics); goods and services market; economics of the firm; investment project; national economy.

1.3. Starting Conditions

Unstipulated

2. Planned Results of the Course Training

Competence	Indicator's Index	Planned results of learning discipline (to know, to be able to, to master)	Competence attainment indicator correlated with the planned training results	Means of Assessment
UC-1	IA-1.UC-1	To know the essence and components of external microeconomic operating environment of business entities; the essence and components of external macroeconomic operating environment of business entities	Knows how to search, to make critical analysis and synthesis of information aimed at solution of the given professional tasks.	Workshop report
	IA-2.UC-1	To be able to count development indicators for specific markets	Is able to search, critically analyze and synthesize information aimed at solving science-focused problems in the professional field.	Test
	IA-3.UC-1	To be able to make a complex analysis of specific industry's development, specific market based on comparative analysis of dynamics indicators through searching, critical analysis and synthesis of information.	Is able to search, synthesize and critically analyze information in professional field; to find a systemic approach aimed at solution to the given tasks.	Individual task
UC-2	IA-1.UC-1	To know the essence and components of the inner	Knows the approaches to the problems statement	Workshop report

		operating environment of business entities; the basics of economic analysis for effectiveness results for activities of business entities; the basics of developing and evaluating economic efficiency of investment projects	aimed at the achievement of the given target, possesses knowledge in choice of optimal ways of their solution; Realizes the basic principles of economic operation as well as the economic development, the purposes and forms of State's Interest in economics.	
	IA-2.UC-2	To be able to calculate indicators characterizing the provision of an enterprise with fixed assets, working capital, labor resources within given conditions; calculate profit indicators, profitability, calculate the costs of a manufacturing enterprise, determine the breakeven point within given conditions; -calculate the performance indicators (KPI) of an investment project within given conditions.	Is able to choose efficient solution of science-focused tasks in a professional field aimed at achievement of the given purpose due to the current laws, available resources and considerations; use the methods of individual economic and financial planning aimed at achievement of the current and long-term financial purposes.	Test
	IA-3.UC-2	To master the skills of identify appropriate ways of solving specific problems based on the calculation of technical and economic indicators of the enterprise; calculate the effectiveness of an investment project within given conditions of available resources and considerations	Masters the skills of set out the scope of professional tasks under given goal; identify appropriate ways of goals achievement considering the current laws and available resources; use financial tools for managing personal sets (personal budget), control personal economic financial risks	Individual task
UC-10	IA-1.UC-10	To know basic principles of economic operation and development, purposes and types of state participation in economy, including monetary and fiscal policy	Knows basic principles of economic operation and development, purposes and types of state participation in economy	Workshop report
	IA-2.UC-10	To be able to apply methods of personal economic and financial planning aimed at achievement of current	Is able to apply methods of personal economic and financial planning aimed at achievement of current and long-term financial	Test

		and long-term financial goals, determine the principles of personal financial security	goals	
	IA-3.UC-10	To master the skills of use financial instruments for personal finances management (personal budget), controls personal economic financial risks, - count profits of personal investments	Masters the skills of use financial instruments for personal finances management (personal budget), control economic financial risks of himself	Individual task

3. Full time and forms of academic work

Type of academic work	Total hours	Distribution by semesters in hours		
		Semester		
		4		
1. Training (including conducting current monitoring) academic performance:	63	63		
1.1. Classroom working, including:				
- lectures (L)	27	27		
- laboratory work (LW)				
- practical classes, workshops and/or other seminar-type work (PW)	32	32		
- control of self-work (CSW)	4	4		
- final control test				
1.2. Students' self-work (SSW)	81	81		
2. Intermediate attestation				
Exam				
Grading test	9	9		
Test (Credit)				
Course Project (CP)				
Course Work (CW)				
Workload in hours	144	144		

4. Course outline

Name of the units with the course outline	Full time of classroom activity in hours according to the forms			Full time of extracurricular work in hours according to the forms CDs
	L	LW	PW	
Semester 3				
Unit 1. Characteristics of external microeconomic environment of business entities	6	0	6	16
Topic 1. The essence and components of the economic systems. Economics. Resources, needs, benefits. Curve of production capabilities. Subject of economics research. Economic tasks. Functions of the economy. Economics methods.	2	0	2	6

<p>Economic system: essence and structure. The main questions of the economic system. The structure of the economic system: subjects and their functions (households, government, firms). Circulation of income and products. Basic models of economic systems: traditional, administrative-command, market, mixed. Property relations: ownership, disposition and use. Objects and subjects property. Forms of ownership: state, municipal, private, property of public organizations. Privatization. General equilibrium and well-being. Inequality in the distribution of income.</p>				
<p>Topic 2. Enterprise as a system. Classification of enterprises. Enterprise as an open system. Internal and the external environment of the enterprise. Organizational and legal forms of enterprises.</p>	2	0	2	4
<p>Topic 3. Market conditions for goods and services as effective factor of enterprises functioning. Market. Market mechanism. Goods as a market object. Individual and market demand. Demand law. Non-price factors of demand. Income effect and affect substitution. Elasticity of demand. Offer and supply law. Non-price factors offers. Elasticity of the offer. Equilibrium price. Anti Monopoly regulation. The law of value. Shadow economy. Market economy infrastructure.</p>	2	0	2	6
<p>Module 2. Characteristics of external macroeconomic environments of business entities.</p>	4	0	6	17
<p>Topic 4. Development of the national economy as factor of the functioning of the enterprise. Macroeconomics. National economy as a whole. Aggregation as a basic method of macroeconomic analysis. Subjects of macroeconomics. Macroeconomic circulation. System of macroeconomic indicators. System of national accounts. Methods for calculating basic macroeconomic indicators: gross domestic product (GDP), value added, gross national product (gross national income), net national product, national income, personal income, disposable personal income. Nominal GDP. Real GDP. GDP deflator. Index of consumer prices. Economic growth rates. Economic growth factors.</p>	2	0	3	8
<p>Topic 5. State regulation activities of business entities. Purpose, tasks of state regulation economy. Basic methods of state regulation of the economy. Money turnover. Monetary policy. Cash (bank) multiplier. The structure of modern credit systems. Central bank. Commercial banks. Specialized credit and financial institutions. The main directions of the state's monetary policy. Tools of monetary policy of the Central Bank. Public finance. State budget. State revenue and expenditure budget. Budget deficit and its types. Taxes. The system of taxes and fees in the Russian Federation.</p>	2	0	3	9

Laffer curve. Fiscal policy of the state. Social policy of the state. General equilibrium and well-being.				
Module 3. Characteristics of the internal environment of the functioning of business entities. Section 1. Provision of business entities with fixed assets, working capital, labor resources	6	0	6	12
Topic 6. Fixed assets of an enterprise as a factor of opportunities and limitations in the activities of business entities. Fixed asset management methods. Fixed assets concept. Composition and structure of fixed assets. Factors affecting the structure of fixed assets. Classification of fixed assets. Valuation of fixed assets. Methods for calculating the average annual cost. Wear. Types of wear. Physical and moral deterioration. Depreciation. Depreciation methods.	2	0	2	4
Topic 7: Working capital of an enterprise as a factor opportunities and limitations in activities of business entities. Working capital management methods. Working capital concept. The composition of the negotiable capital. Working capital structure. Factors affecting the structure of working capital. Classification of working capital. Rationing of working capital. Turnover of the capital. Indicators of the efficiency of using working capital.	2	0	2	4
Topic 8. Labor resources of the enterprise as a factor of opportunities and limitations in activities of business entities. Management methods of labor resources. The concept of labor resources of the enterprise. Personnel structure of the enterprise: personnel structure, types of personnel composition and indicators of personnel movement. The concept of labor productivity, productive force, labor intensity. Labor productivity indicators: production, labor intensity. Methods for increasing labor productivity. Remuneration, principles of its organization, basic forms and systems in industry. Forms and systems of personnel remuneration	2	0	2	4
Module 3. Characteristics of the internal environment of the functioning of economic entities. Section 2. Methods for the critical analysis of the results and efficiency of business entities	11	0	16	36
Topic 9. Features of the formation of income and expenses of business entities. Classification of income and expenses.	2		3	7
Topic 10. Pricing. Economic content, price functions. Types of prices and their structure. Market pricing mechanism. Price elasticity. Methods for determining prices.	2		3	7
Topic 11. Economic content, functions and types of profit. Profit from sales, profit before tax, net profit. Income tax. The economic content of profitability. Indicators of profitability.	2		3	7

Topic 12. Cost analysis in the production process. Costing calculation. The concept of cost. Costing concept. Production cost estimate. Cost classification. Fixed cost concept. The concept of variable costs. The schedule is constant and variable costs. The total costs of the enterprise. Specific (average) fixed costs. Unit (average) variable costs. Scale effect.	2		3	7
Topic 13. Analysis of production break-even. The concept of a break-even point. The relationship of sales revenue, expenses and profit from product sales (break-even analysis). Marginal income. Margin income ratio. Financial safety margin. Production leverage (operating leverage). Cost - Sales - Profit Analysis (CVP Analysis). Methodology for calculating break-even indicators	3		3	8
Total with regard to the semester	27	0	32	81
Total with regard to the course	27	0	32	81

Topics of exemplary practical work

Sl. №	Topic of practical (seminar) work
1	Calculation of the optimal volume of production for given resources based on solving problems along the curve of production capabilities.
2	Determination of market equilibrium and calculation of the coefficient of elasticity of supply and demand in the consumer market based on solving typical problems.
3	Determination of market equilibrium in the labor market, land, capital based on the solution of typical problems.
4	Calculation of indicators characterizing the structure of the national economy based on solving typical problems.
5	Calculation of indicators characterizing the effectiveness of state macroeconomic policy based on solving typical problems.
6	Calculation of indicators characterizing the structure of the fixed capital of the enterprise, calculation of the average annual cost of fixed assets, calculation of the amounts of depreciation charges based on solving typical problems.
7	Calculation of indicators characterizing the structure of the company's working capital, indicators of its turnover based on the solution of typical problems.
8	Calculation of indicators characterizing the provision of an enterprise with labor resources on the basis of solving typical problems.
9	Calculation of indicators of revenue, profit, profitability of the enterprise based on the solution of typical tasks.
10	Calculation of the costs of a manufacturing enterprise, the implementation of the choice of the method of distribution of indirect costs based on the solution of typical problems.
11	Determination of economies of scale, calculation of break-even indicators, marginal income and marginal income ratio based on solving typical problems.
12	Calculation of performance indicators of an investment project based on solving typical problems.

Topics of exemplary laboratory practice

Sl. №	Topic of laboratory work
	Unstipulated

5. Organizational and Pedagogical Conditions

5.1. Educational Technologies for Competences Formation

Holding lectures in the discipline based on the active method of training in the process of which students are not passive but active participants of the lesson answering questions of the teacher. Teacher's questions are aimed at activating the process of learning material as well as at the development of logical thinking. The questions stimulating associative thinking and connecting new material with the previous one are identified by the teacher in advance.

Practical lessons are held by realization of the method based on active training: problem areas are determined, groups are formed. The following aims are pursued in the process of practical education: use of definite disciplines knowledge and creative methods in solving problems and decision-making; students' skill-building of teamwork, interpersonal communication and development of leadership skills; consolidation of the basic theoretical knowledge.

5.2. Students' Manual for the Course Study

Learning the course students are recommended to fulfill the following positions:

1. Learning of the discipline should be done systematically.
2. After learning one of the course units with the help of the text-book or lecture notes it is recommended to reproduce in memory the basic terms, definitions, notions of the unit.
3. Special attention should be paid to the reports on practical studies and individual complex tasks for self-work.
4. The topics list for individual study is given by the teacher at the lectures. The teacher also provides students with literary sources (first of all, new ones in the periodical scientific literature) for a more detailed understanding of the issues presented at the lectures.

6. List of Teaching Materials and Information Supply for Students' Self work in the Discipline

6.1. Paper-based courseware

№ in order	Bibliographic entry (author, title, mode of publication, place, publishing house, year of publication, number of pages)	Number of copies in the library
1. Basic literature		
1	Sandler Todd Economic Concepts for the Social Sciences / ToddSandler. - Cambridge: Cambridge Univ. Press, 2001. 285 p.	1
2	Davis J.B. The Theory of the Individual in Economics: Identity and value / J.B.Davis. - London; Ney York: Routledge, 2003. 216 p.	1
2. Additional literature		
2.1. Educational and scientific literature		
1	Brecher Jeremy Global Village or Global Pillage: Economic Reconstruction from the Bottom Up / JeremyBrecher, TimCostello. - Boston: South End Press, 1994. – 237 p.	1
2.2. Standardized and Technical literature		
	<i>Not provided</i>	
3. Students' manual in mastering discipline		
1	<i>Guidelines for students to master the discipline</i>	1

4. Teaching and learning materials for students' self work		
1	<i>Guidelines for students' selfwork</i>	I

6.2. Electronic Courseware

Kind of literature	Name of training tool	Reference to information resource	Accessibility of EBN (Internet/local net; authorized free assess)
<i>Basic literature</i>	Poksepay S. Economics: a study guide for classroom and independent work of students. Direction of training 03/38/01 economics / Potsepay S.N., Rezunova M.V., Vaskina T.I. - Bryansk: Bryansk State Agrarian University, 2018.	https://elib.pstu.ru/Record/lanRU-LAN-BOOK-133083	authorized free assess
<i>Basic literature</i>	Fedorov, V. Economics and Management in the Modern World: a tutorial / V. A. Fedorov, O. G. Nekhaeva, S. R. Solovyova. - Voronezh: Voronezh State Technical University, EBS ASV, 2019.	https://elib.pstu.ru/Record/iprbooks93308	authorized free assess

6.3. License and Free Distributed Software used in the Course Educational Process

Type of Software	Software branding
Operating systems	MS Windows XP (signed Azure Dev Tools for Teaching till 27.02.2022)
Office application programs	Microsoft Office Professional 2007, license Nr. 42661567
General purpose software	Dr.Web Enterprise Security Suite

6.4. Modern Professional Databases and Inquiry Systems Used in the Course Educational Process

Branding	Reference to information resource
Scopus database	https://www.scopus.com/
Web of Science Database	https://www.webofscience.com/
Scientific electronic library database (eLIBRARY.RU)	https://elibrary.ru/
Scientific Library of the Perm National Research Polytechnic University	https://lib.pstu/
Lan Electronic Library System	https://e.lanbook.com/
Electronic library system IPRbooks	https://www.iprbookshop.ru/
Information resources of the Network ConsultantPlus	https://www.consultant.ru/
Company database EBSCO	https://www.ebsco.com/

7. Logistics of the Course Educational Process

Type of classes	Name of the necessary basic equipment	Number of units
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Lecture	PC, projector, whiteboard	1
Practical class	PC, projector, whiteboard	1

8. Fund of the Course Evaluating Tools

Described in a separate document