

Ministry of Education and Science of Ukraine  
M.Ye. Zhukovsky National Aerospace University  
“Kharkiv Aviation Institute”

Department of Public Administration and Entrepreneurship (601)

**APPROVED by**  
Project team leader

  
\_\_\_\_\_  
«01» april 2020

## **WORK PROGRAM FOR NORMATIVE ACADEMIC DISCIPLINE**

### **Business Economics**

(code and name of the course)

### **Area of study:**

13 «Mechanical Engineering»

(area code and name)

### **Major:**

134 «Aviation and Aerospace Engineering»

(major code and name)

### **Educational program:**

Aircraft engines and power plants

(name of educational program)

**Form of study: full-time**

**Higher education level: first (Bachelor)**

Kharkiv 2020

Work program for academic discipline « **Business Economics** » for students of **major:** 134 «Aviation and Aerospace Engineering» **educational program:** airplanes and helicopters, aircraft production technologies, design and manufacture of composite structures

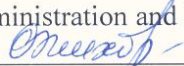
27 August, 2020, 14 p.

Author:

Department 601 ass. professor, PhD in Economics  T.Yu. Pavlenko

Work program for academic discipline was approved at the faculty meeting at the Department of Public Administration and Entrepreneurship (601)

Protocol № 1 from “27” August, 2020

Chairman of the Department of Public Administration and Entrepreneurship (601), economic sciences doctor, professor  O. B. Zhyhor

## 1. Academic discipline description

Name of characteristic	Area of knowledge, major, educational qualification level	Academic discipline characteristic <i>Form of study: full-time</i>
Number of credits – 4	<b>Area of knowledge</b> <u>13 «Mechanical Engineering»</u> (code and name)  <b>Major</b> <u>134 «Aviation and Aerospace Engineering»</u> (major code and name)  <b>Educational program</b> <u>Aircraft engines and power plants</u> (name of educational program)  <b>Educational qualification level:</b> <u>Bachelor</u>	Normativ
Modules – 2		<b>Academic year:</b>
Content modules – 2		2020/2021
Individual scientific research – calculation paper		<b>Semester</b>
General number of hours: number of hours of classes - 56 hours. / Total number of hours -120 hours		7 <sup>th</sup>
		<b>Lectures</b>
Weekly hours for daytime education: class - 3,5; self-study – 4		32 h.
		<b>Practical lessons</b>
		24 h.
		<b>Self-study</b>
	64 h.	
	<b>Type of control</b>	
	modular control, credit	

### Note

The relation between the number of class hours and the number of self-study hours makes up:

56/ 64 h.

\* The classroom load may be reduced or increased by one hour depending on the class schedule.

## **2. Aim and objectives of the course**

**Aim** of the course of Business Economics is to give the necessary knowledge about the economic activity of the enterprise in order to organize the production (provision of services) with maximum economic efficiency.

**Objectives:** formation of modern economic thinking and a system of special knowledge of the economy of the enterprise in the machine-building industry, as well as practical skills of analysis and planning of indicators of economic and production activities

According to the required educational and professional program students are:

**have competencies:**

ZK12. The ability to think abstractly, concretely and generalized, to analyze and synthesize.

FK8. Ability to take into account the economic and managerial aspects of the production of elements and objects of aviation and rocket and space technology in professional activities.

PRN3. Have the means of modern information and communication technologies to the extent sufficient for training and professional activities.

PRN7. Have the logic and methodology of scientific knowledge, based on an understanding of the current state and methodology of the subject area.

**learning outcomes:**

PRN22. Evaluate the economic efficiency of production of elements and systems of aviation rocket and space technology.

**Interdisciplinary links:** "Business Economics" is based on the logic of entrepreneurial activity and uses the methodological provisions of related economic disciplines, including economic theory, microeconomics, statistics and accounting.

## **3. Program of academic discipline**

### **Module 1.**

#### **Content module 1. Resource provision of the enterprise.**

##### **Unit 1. Introduction to the discipline "Business Economics".**

Aims of modern industrial production. Subject and objectives of the course. Course content and its relationship with other disciplines. The role of the course in training specialists of aerospace industry (organizational and economic). The aerospace industry's place in the machine-building industry and its role in scientific and technological progress and increasing welfare. Aerospace industry, its development prospects. Factors that define the scale, growth rate and technical level of its products.

##### **Unit 2. Business types**

The concept of enterprise as an organizationally separate and economically independent primary link of the production sphere. Mission and goals of the enterprise. The main activities of the enterprise.

Classification of enterprises and its practical significance. Essential characteristics of the enterprise structure. Production structure of the enterprise: essence and types.

Factors of formation and change of production structure of the enterprise. General structure of the enterprise (organization).

Integration forms of enterprises and organizations. Forms of voluntary and institutional association of enterprises and organizations (associations, consortia, concerns, corporations, financial and industrial groups, holdings, Sole proprietorship. Partnership. Joint stock company). The purpose of their creation, features and efficiency of activity.

### **Unit 3. Fixed assets of the enterprise**

Composition of assets: fixed and circulating funds. Classification and structure of the main assets in aerospace industry. Tangible assets as a set of means of production and other property of the enterprise. Intangible resources of the enterprise, their impact on the competitiveness of its products on the market. Characteristics of industrial property (inventions, industrial designs, utility models, trademarks, service marks). Information technologies and software products and other intangible resources (know-how, innovation proposals, appellation of origin, goodwill of the company). Intangible assets as legally formalized rights of exclusive use of industrial and intellectual property, their valuation.

Initial, revalued, residual and liquidation value of fixed assets. Classification of fixed assets on the basis of functional purpose and participation in production processes.

### **Unit 4. Depreciation of fixed assets**

The physical essence of technical and economic aging of tools and forms of prevention (repair, modernization, replacement). Depreciation of fixed assets. Depreciation rates. Methods of depreciation. Performance indicators of fixed assets. The accounting and analysis of effective use of equipment.

### **Unit 5. Current assets of the enterprise**

The essential characteristics of current assets as a set of current financial costs. Allocation of current assets that serves the spheres of production and turnover. Normalized and non-standardized current assets. Sources of current assets.

Purpose of rationing (calculation of standards) of current assets. Calculation of current assets standards in their individual elements.

The main indicators of the level of efficiency of current assets: turnover ratios (number of revolutions) and loading, the duration of one turnover, the method of their calculation. Ways to increase the efficiency of current assets: optimization of resource reserves and work in progress; reducing the duration of the production cycle; improving the organization of logistics; accelerating the sale of manufactured products.

### **Unit 6. Production capacity of the enterprise**

Production capacity of the enterprise. General characteristics, types and factors of formation (increase) of production capacity of the enterprise. Basic methodical principles of calculation of production capacity of the created and operating enterprise. Indicators and ways to increase the level of capacity utilization. Analysis of production program. The development of production program.

### **Unit 7. Labor forces, labor productivity of an enterprise**

Staff of a company, its composition and structure. Division of personnel by professions and qualifications. Selection and characterization of workers by skill level. Features of the personnel structure of different enterprises and organizations of different types, sizes and forms of ownership.

Determining the number of management staff, specialists and employees. Calculations of the number of certain categories of working enterprises.

Labor productivity as an economic category. Methodical approaches to the calculation of labor productivity in industrial enterprises. Reserves for productivity growth and measures for their use in modern economic conditions. Calculations of possible growth of labor productivity due to a set of factors.

### **Unit 8. Wages in industry**

The concept of remuneration. The basic salary and additional payment of work. Dependence of wages on the final results of activities The tariff system. Tariff grid. Wage-rate guides. Forms and systems of payment for labor. Time charges. Premium system, bonuses. Improving the system of payment for labor.

**Modular control** - execution of control-module work No. 1

#### **Module 2.**

**Content module 2. Economic indicators of economic activity of the enterprise.**

### **Unit 9. Manufacturing expenses and cost of products.**

Costs and production costs of the enterprise. The role and importance of costs in the economic activity of the enterprise. The cost of production. Classification of production costs by individual characteristics: production purpose (by economic elements and costing items); the method of including expenses in the cost (direct and indirect costs); the influence of production volume (variable and conditional fixed costs); homogeneity of composition (simple and complex costs). Methodical bases of product cost calculation. Calculation volumes and cost items. Methods of calculating costs by costing items and economic elements. Tasks of forecasting and cost planning, cost planning indicators. The main technical and economic factors to reduce production costs. Cost indicators are analyzed. Break-even chart.

### **Unit 10. Price and pricing of enterprise products.**

Price and pricing of products. Functions of prices in the economic activity of the enterprise. Types of prices and their structural elements. Methods of setting market prices. Concepts of pricing in market conditions. The law of demand and the law of supply. Equilibrium point.

### **Unit 11. Financial and economic results and efficiency of the enterprise.**

Profit and income as the main indicators of financial performance of the enterprise. Profitability and profitability: their essence and the difference between them. Sources of formation of the total amount of profit (income) of the enterprise.

Profitability as a relative indicator of the efficiency of the enterprise. General characteristics of profitability of applied (invested) resources. Calculation of profitability: means of production of the enterprise, manufactured products, sold products.

### **Unit 12. Marketing in the enterprise.**

Marketing and its objective necessity in the organization, planning and development of the enterprise. Functions and principles of marketing, organization of their implementation. Marketing goals, strategy and tactics to achieve them.

### **Unit 13. Business plan**

Development of the business plan. Contents of the plan. The main parts. Basic technical and economic parameters for enterprise's activity in the business plan. The meaning and essence of business planning. Volumes and content of specific sections of the business plan: characteristics of new products, market assessment based on marketing research, production plan, organizational plan, financial strategy and financial plan, risk assessment and prevention.

### **Unit 14. Investment activity of the enterprise.**

The essence, characteristics of investment as the most important financial resource for the creation, operation and development of the enterprise. The purposes and structure of investments of the enterprise. Sources of investment formation. Investment process at the enterprise: characteristics of the investment process, subjects and objects of the investment process, investment project of creation and development of the enterprise. Investment efficiency: factors influencing the level of investment efficiency, methods of evaluation of investment projects.

### **Unit 15. Management in the enterprise**

Management as a tool of market economy. Concepts and essence of management. The economy as an object of management. The problems of economics and management. The meaning of categories: control and management, manufacturing management, finance management, human resources management, innovation management, accounting management, sales management.

### **Unit 16. Competitiveness of the enterprise.**

Product quality as an economic category and the main factor of enterprise competitiveness. Characteristics of product quality that affect competitiveness: functional (reliability, maintainability, durability), technological (production and operational manufacturability, aesthetic (shape, size, design), ergonomic (hygienic, anthropometric, physiological, psychophysiological), environmental safety and human environment), patent and license (novelty, patent frequency). Competitiveness of the enterprise. Factors influencing the competitiveness of products: consumer properties, price level, after-sales service, advertising and image of the enterprise. Ensuring competitiveness through factors of competitive advantage and their comparative analysis with the capabilities of competitors.

**Modular control** - execution of control-module work No. 2

#### 4. Structure of academic discipline

Topics for content modules and units	Number of hours				
	total	including			
		L	P	lab.	ind.
1	2	3	4	5	6
<b>Module 1.</b>					
<b>Module 1 contents.</b>					
Unit 1. Introduction to the discipline "Business Economics".	3	1	-	-	2
Unit 2. Business types	5	2	1	-	2
Unit 3. Fixed assets of the enterprise	7	2	1	-	4
Unit 4. Depreciation of fixed assets	13	3	2	-	8
Unit 5. Current assets of the enterprise	9	2	1	-	6
Unit 6. Production capacity of the enterprise	7	2	1	-	4
Unit 7. Labor forces, labor productivity of an enterprise	7	2	1	-	4
Unit 8. Wages in industry	9	2	1	-	6
<b>Total in module 1</b>	<b>60</b>	<b>16</b>	<b>8</b>	<b>-</b>	<b>36</b>
<b>Module 2.</b>					
<b>Module 2 contents.</b>					
Unit 9. Manufacturing expenses and cost of products	8	2	2	-	4
Unit 10. Price and pricing of enterprise products.	8	2	2	-	4
Unit 11. Financial and economic results and efficiency of the enterprise	7	2	2	-	3
Unit 12. Marketing in the enterprise	7	2	2	-	3
Unit 13. Business plan	7	2	2	-	3
Unit 14. Investment activity of the enterprise	8	2	2	-	4
Unit 15. Management in the enterprise	7	2	2	-	3
Unit 16. Competitiveness of the enterprise	8	2	2	-	4
<b>Total in module 2</b>	<b>60</b>	<b>16</b>	<b>16</b>	<b>-</b>	<b>28</b>
<b>Hours total</b>	<b>120</b>	<b>32</b>	<b>24</b>	<b>-</b>	<b>64</b>

#### 5. Topics for seminars lessons

№	Name topics	Num. of hours
1		
2		



## 6. Topics for practical lessons

№	Name topics	Num. of hours
1.	Main organizational forms of businesses.	1
2.	Calculation of initial, revalued, residual and liquidation value of fixed assets.	1
3.	Calculation of depreciation using current methods	2
4.	Estimation of effective use of Fixed Capital.	1
5.	Coefficient of turnover. Ways of improvement of use circulating capital.	1
6.	Calculating capacity of the work-shop of an enterprise.	1
7.	Defining of quantity of required personnel. Changing labor intensity with the quantity of goods. Forms and systems of payment for labor.	1
8.	Calculation of overheads. Variable and fixed expenses.	2
9.	Calculation of cost price.	2
10.	Break – Even Point – as a parameter of economic efficiency of the new aircraft. Data for calculation. The order of calculation.	2
11.	Calculation of profit maximization due to change in price and quantity of products.	2
12.	The law of demand and the law of supply. Equilibrium point.	1
13.	Methods of establishment the market price of the product.	1
14.	Order of calculation of economic rational version of technological process.	2
15.	Net Present Value of Discounted Cash Flow – as a parameter of economic efficiency of the new aircraft.	2
16.	Assessment of the competitiveness of an enterprise or product.	2
<b>Total</b>		<b>24</b>

## 7. Topics for laboratory lessons

№	Name topics	Num. of hours
1		
2		

## 8. Self-study

№	Name topics	Num. of hours
1.	Main organizational forms of businesses.	2
2.	Calculation of initial, revalued, residual and liquidation value of fixed assets.	4
3.	Calculation of depreciation using current methods	8
4.	Estimation of effective use of Fixed Capital.	2
5.	Coefficient of turnover. Ways of improvement of use circulating capital.	6
6.	Calculating capacity of the work-shop of an enterprise.	4
7.	Defining of quantity of required personnel. Changing labor intensity with the quantity of goods. Forms and systems of payment for labor.	4
8.	Calculation of overheads. Variable and fixed expenses.	6
9.	Calculation of cost price.	4
10.	Break – Even Point – as a parameter of economic efficiency of the new aircraft. Data for calculation. The order of calculation.	4
11.	Calculation of profit maximization due to change in price and quantity of products.	4
12.	The law of demand and the law of supply. Equilibrium point.	2
13.	Methods of establishment the market price of the product.	2
14.	Marketing in the management system of economic activity of the enterprise.	2
15.	Net Present Value of Discounted Cash Flow – as a parameter of economic efficiency of the new aircraft.	6
16.	Assessment of the competitiveness of an enterprise or product.	4
	<b>Total</b>	<b>64</b>

## 9. Individual tasks

Individual task in the course of “Business Economics” is done by the students themselves and under the guidance of the instructor.

Individual task means the students should prepare paper assignments, reports, information material, spreadsheets with calculation of indicators, all of which can be used during seminars.

## 10. Teaching methods

For the sake of effective material learning the following teaching methods are used:

- explanatory and descriptive;
- method of schematic illustration of the subject matter in the form of diagrams, charts, graphs;
- situational method (solving and analysis of particular economic problems);
- reproductive;
- method of investigation.

## 11. Methods of progress control

System of current knowledge control contains estimation of:

- systematic and active student participation during practical lessons;
- individual and self-study task accomplishment;
- final grading (fail/pass).

## 12. Assessment criteria and the distribution of points that students receive

### 12.1 Distribution of points received by students (quantitative evaluation criteria)

Components of study work	Points for one class (task)	Number of lessons	Total number of points
<b>Content module 1</b>			
Execution and protection of practical works	0...2	4	0...8
Modular control	0...25	1	0...25
Content module 2			
Execution and protection of practical works	0...3	8	0...22
Modular control	0...25	1	0...25
Compilation and defense of calculation paper	0...20	1	0...20
<b>Total for the semester</b>			<b>0...100</b>

The semester control (examination) is carried out in case of student's refusal of the points of the current testing and if there is admission to the exam / credit. During the semester exam / credit, the student can get a maximum of 100 points.

The exam / credit card consists of two theoretical questions, with a maximum score of 30 points for each question, and one practical task of 40 points, totaling 100 points.

## 12.2. Qualitative evaluation criteria

**The required amount of knowledge to receive a positive assessment:** as a result of studying the discipline Business Economics students should know:

- contemporary development of aerospace industry, current and future problems facing the aerospace industry;
- economic foundations of production: evaluation of production, equipment, personnel, distribution methods and forms of wages;
- basic economic categories (labor productivity, capital productivity, cost and product price, profit, profitability, etc.);
- ways to improve production efficiency, effective use of all types of production resources;
- methods for evaluating investments and measuring higher efficiency;
- requirements for the organization and management of enterprise;
- calculations of the duration of production cycles.

**The required amount of skills to receive a positive assessment:** as a result of studying the discipline students should be able to:

- conduct economic calculations;
- develop a business plan for new types of products;
- conduct economic analysis and choose among entrepreneurial, scientific, technical and organizational decisions based on economic criteria;
- develop and implement measures to increase the effectiveness of production and implementation technologies that save resources;
- perform calculations in organization of production and labor.

## 12.3 Criteria for assessing student work during the semester:

**Satisfactory (60-74).** Have a minimum of knowledge and skills. Perform all practical tasks. Be able to independently calculate the main economic indicators.

**Good (75 - 89).** Firmly know the minimum of knowledge, perform all tasks. Demonstrate the ability to perform all practical classes and individual tasks within the period specified by the teacher with a justification of the decisions and measures proposed in the works. Be able to independently calculate the main economic indicators of the enterprise.

**Excellent (90 - 100).** Fully know the basic and additional material. Know all topics. Navigate in textbooks and manuals. Unmistakably perform all practical tasks within the period specified by the teacher with a detailed justification of the decisions and measures proposed in the works. Be able to explain the calculation of the main economic indicators of the enterprise.

### Grading scale: point and traditional

The sum of points	National grade	
	Exam, differentiated credit	Credit
90 - 100	excellent	pass
75 - 89	good	
60 -74	satisfactory	
0 – 59	unsatisfactory	fail

### 13. Methodological guidelines

1. Economics of enterprise: Tutorial / Ya. Safronov, V. Kupriyanova, L. Kornilov and other. Kh. : National Aerospace University “Kharkiv Aviation Institute”, 2014. – 54 p.
2. Calculation of Economic Indicators for Machine-Building Enterprises: Tutorial / T.Yu. Pavlenko, Ya.V. Safronov, D.S. Shvedova, V.S. Kupriyanova. – Kharkiv.: National Aerospace University “Kharkiv Aviation Institute”, 2018. – 76 p.
3. [k601@khai.edu](mailto:k601@khai.edu) electronic resource, which houses the educational and methodological complex of the discipline, which includes:

Required components:

- work program of the discipline;
- lecture notes, textbooks (manuals), including in electronic form, which in content fully correspond to the work program of the discipline;
- methodical instructions and recommendations for performance of settlement work, practical works, and also recommendations for independent preparation;
- topics of individual tasks;
- examples of solving typical tasks or performing typical tasks;
- questions, tests for control measures;
- catalogs of information resources.

### 14. Recommended reading

#### Basic

1. Maier M. Introducing economics: A critical guide for teaching. / Maier M., Nelson J. — New York, London, England : M.E.Sharpe Armonk. — 2007 (1956). — 281 p.
2. Mankiw N. G. Principles of Economics / N.G. Mankiw / [6th edition]. – UK. : Cengage Learning. — 2011. — 890 p.
3. Bhat M.S., Rau A. V. Managerial Economics and Financial Analysis. – 2008 – 363 p.

4. McConnell C. Economics: Principles, Problems, & Policies / [Campbell McConnell, Stanley Brue, Sean Flynn] // McGraw-Hill Series in Economics; 20 edition. – McGraw-Hill/Irwin —2014. — 996 p.
5. Mankiw N. G. Principles of Economics / N.G. Mankiw / [6th edition]. – UK. : Cengage Learning. — 2011. — 890 p.
6. McConnell C. Economics: Principles, Problems, & Policies / [Campbell McConnell, Stanley Brue, Sean Flynn] // McGraw-Hill Series in Economics; 20 edition. – McGraw-Hill/Irwin —2014. — 996 p.
7. MIT OpenCourseWare. Electronic resource: Access address: <http://ocw.mit.edu>
8. The Oxford Handbook of Entrepreneurship / [Mark Casson, Bernard Yeung, Anuradha Basu]. — Oxford Handbooks Online. — 2008. — 790 p.
9. Бабушкин, А. И. Экономика предприятия : учебн. пособие / А. И. Бабушкина. – Харків : ХАІ, 2003. – 449 с.
10. Сафронов Я. В. Экономическое обоснование бизнес-проектов в машиностроении / Я. В. Сафронов, В. Н. Гавва, В. А. Пильщиков – Х. : Нац. аэрокосм. ун-т им. Н. Е. Жуковского «Харьк. авиац. ин-т», 2002. – 114 с.
11. Экономика предприятия : учеб. для вузов / под ред. В. Я. Горфинкеля, В. А. Швандара. – 3-е изд., перераб. и доп. – М. : ЮНИТИ-ДАНА, 2001. – 718 с.
12. Экономика предприятия : учебник / [под ред. проф. О. И. Волкова. – М. : ИНФРА-М, 2001. – 520 с.

### **Additional**

1. Mankiw N. G. Principles of Microeconomics / N.G. Mankiw. — Harvard University Press : 2008. — 528 p.
2. The Oxford Handbook of Entrepreneurship / [Mark Casson, Bernard Yeung, Anuradha Basu]. — Oxford Handbooks Online. — 2008. — 790 p.

### **15. Informational resources**

[https://www.economicsonline.co.uk/category/business\\_economics](https://www.economicsonline.co.uk/category/business_economics)

<https://www.investopedia.com/economics-4689800>