

Ministry of Science and Higher Education of the Russian Federation  
 Federal State Budgetary Educational Institution of Higher Education  
**Perm National Research Polytechnic University**

**APPROVED BY**

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 Rector for Academic Affairs

N.V. Lobov

20 21

**ACADEMIC COURSE WORKING PROGRAM**

**Academic course:** Business and economics  
 (Name)

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

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

**Workload in hours (in credits):** 216 (6)  
 (Hours (CU))

**Training program (degree):** 21.03.01 Oil and Gas Engineering  
 (Code and denomination of degree)

**Direction:** Oil and Gas Engineering  
 (Title of curriculum)

## 1. GENERAL PROVISIONS

### 1.1. GOALS AND OBJECTIVES OF THE COURSE

The purpose of the course is to form a system of knowledge and develop skills in the fields of:

- industrial production management and commercialization of industrial innovations;
- technological entrepreneurship and business implementation in the industrial market.

### 1.2. STUDIED OBJECTS OF THE COURSE

The content of the course covers the following aspects:

- fixed and working capital;
- labour;
- investments and sources of economic effects at an industrial enterprise;
- economic processes in the industrial market.

### 1.3. STARTING CONDITIONS

Unstipulated

## 2. PLANNED RESULTS OF THE COURSE TRAINING

Competence	Indicator's Index	Planned Results of the Course Training (to know, to know how, to master)	Indicator of Attaining Competence which the planned results of training are correlated with	Means of Assessment
1	2	3	4	5
UC-1	IA-1 <sub>uc-1</sub>	<b>To know</b> the methods of searching information and making critical analysis and synthesis of industry technical and economic information for feasibility study aimed at solution of the given professional tasks	<b>Knows</b> how to search, to make critical analysis and synthesis of information aimed at solution of the given professional tasks	Test
	IA-2 <sub>uc-1</sub>	<b>To be able to</b> apply systemic approach on the basis of search, critical analysis and synthesis of industry technical and economic information aimed at solution of science-oriented problems of professional field.	<b>Is able to</b> apply systemic approach on the basis of search, critical analysis and synthesis of information aimed at solution of science-oriented problems of professional field.	Practical review

1	2	3	4	5
	IA-3 <sub>uc-1</sub>	<b>To master the skills of</b> search, synthesis and critical analysis of technical and economic information in professional field; systemic approach aimed at solution of the given tasks at an industrial enterprise from an economic point of view.	<b>Masters the skills of</b> search, synthesis and critical analysis of information in professional field; systemic approach aimed at solution of the given tasks.	Test
UC-2	IA-1 <sub>uc-2</sub>	<b>To know</b> economic, managerial and market approaches to solve stated enterprises problems, that serves to achieve the given target; how to find optimal ways of problems solution; the basic principles of economy operation as well as the economic development	<b>Knows</b> the economic and managerial approaches to the problems statement aimed at the achievement of the given target, possesses knowledge in choice of optimal ways of their solution; realizes the basic principles of economy operation as well as the economic development, the aims and forms of the state interest in the economy	Test
	IA-2 <sub>uc-2</sub>	<b>To be able to</b> choose economically optimal ways of solution of science-oriented tasks in professional field aimed at achievement of the given target; use the methods of individual economic and financial planning aimed at achievement of the current and long-term financial goals in the current market environment.	<b>Is able to</b> choose optimal ways of solution of science-oriented tasks in professional field aimed at achievement of the given target; uses the methods of individual economic and financial planning aimed at achievement of the current and long-term financial goals in the current market environment.	Practical review
	IA-3 <sub>uc-2</sub>	<b>To master the skills of</b> determining economically justified scope of professional tasks in the frames of the given target aimed at commercialization of innovations; finding economically optimal ways of problem solution considering the current legal regulations and available resources and market conditions; using financial instruments for managing personal finances (personal budget); personal economic financial risks control.	<b>Masters the skills of</b> determining the scope of professional tasks in the frames of the given target; the skills of the choice of optimal ways of their solution considering the current legal regulations and available resources; the skills to use financial instruments for managing personal finances (personal budget), to control personal economic financial risks.	Grading test

### 3. FULL TIME AND FORMS OF ACADEMIC WORK

Form of academic work	Hours in all	Distribution in hours according to semesters	
		Number of semester	
		1	2
1. Holding classes (including results monitoring) in the form:	72	36	36
1.1. Contact classwork, including:			
– lectures (L)	–	–	–
– laboratory work (LW)	–	–	–
– practice, seminars and/or other seminar-type work (PW)	64	32	32
– control of self-work (CSW)	8	4	4
– test	–	–	–
1.2. Students' self-work (SSW)	144	72	72
2. Intermediate attestation	–	–	–
Exam	–	–	–
Grading test	9	–	9
Test (Credit)	9	9	–
Course Project (CP)	–	–	–
Course Work (CW)	–	–	–
<b>Workload in hours</b>	<b>216</b>	<b>108</b>	<b>108</b>

### 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
	L	LW	PW	SSW
1	2	3	4	5
<b>5 semester</b>				
Rationing and evaluating the efficiency of using industrial enterprise resources.	0	0	16	36
Fixed capital of industrial enterprise:				
<i>basic terms and definitions;</i>				
<i>specificity of classification;</i>				
<i>assessment of fixed capital requirements;</i>				
<i>depreciation of fixed capital;</i>				
<i>indexes of fixed capital consumption;</i>				
<i>production capacity and its efficiency indicators.</i>				
Working capital of an industrial enterprise:				
<i>basic terms definitions and elements;</i>				
<i>methods of classification and working capital regulation;</i>				
<i>types of inventories and it's costing;</i>				
<i>assessment of working capital consumption.</i>				
Personal rationing, labour productivity and wages at an industrial enterprise:				
<i>Labour structure at an enterprise, basic terms and regulatory documents differentiating the level of qualifications and remuneration;</i>				

1	2	3	4	5
<i>labor productivity indicators;</i>				
<i>industrial methods of personnel rationing;</i>				
<i>basic forms and systems of remuneration.</i>				
Fundamentals of economic analysis in an industrial enterprise	0	0	16	36
Product pricing and costing methods in the industry:				
<i>costing methods;</i>				
<i>industrial pricing methods;</i>				
<i>the system of price discounts.</i>				
Financial and economic analysis of a company:				
<i>profitability ratio;</i>				
<i>financial stability ratios;</i>				
<i>liquidity ratios;</i>				
<i>activity analysis ratios;</i>				
<i>factorial analysis.</i>				
Assessment of the economic effect of introducing innovations in an industrial enterprise:				
<i>assessment of the economic effect of applying new technological processes</i>				
<i>economic effect assessment of using new fixed capital items;</i>				
<i>economic effect assessment of using new materials in production process;</i>				
<i>economic effect assessment of using new technology in several areas of consumption;</i>				
<i>specific industry methods for assessing the economic effect of innovation;</i>				
<i>assessment of royalties for innovative development.</i>				
Total	0	0	32	72
<b>6 semester</b>				
<i>Planning of economic activity at an industrial enterprise and technological entrepreneurship</i>	0	0	16	36
Investment effectiveness evaluation at an industrial enterprise:				
<i>basic terms and definitions;</i>				
<i>principles and methods of forming an investment project for industrial production;</i>				
<i>investment project performance indicators;</i>				
<i>methods of accounting for industry risks in investment design;</i>				
Planning at an industrial enterprise:				
<i>basic terms and definitions;</i>				
<i>planning principles and methods;</i>				
<i>system of enterprise plans, calculations of plans and its indicators;</i>				
<i>planning in an industry enterprise;</i>				
<i>calculations of plans and its indicators;</i>				
<i>planning of an enterprise scientific and technical development;</i>				

1	2	3	4	5
Features of business planning at an industrial enterprise in the commercialization of scientific and technical innovations:				
<i>basic terms and definitions;</i>				
<i>content of business plan sections in the commercialization of scientific and technical innovations;</i>				
<i>how to fill in sections of the business plan;</i>				
<i>methods for determining the sources of financial resources and the cost of attracting capital for a business plan implementation;</i>				
<i>risk accounting methods in the commercialization of scientific and technical innovations</i>				
Industrial enterprise management	0	0	16	36
Management system at an industry enterprise:				
<i>basic terms and definitions;</i>				
<i>types of organizational and management structures;</i>				
<i>organizational and economic methods of decision-making and management of an industrial enterprise;</i>				
<i>methods of motivation and personnel management, conflict resolution;</i>				
<i>information support system at industry enterprises;</i>				
<i>strategic, tactical and operational planning system at an enterprise;</i>				
Management of the company's sales activities:				
<i>basic terms and definitions;</i>				
<i>methods of market demand research;</i>				
<i>methods of product positioning and promotion on the market;</i>				
<i>trademark and brand policy;</i>				
<i>competitiveness assessment methods of an industrial enterprise and its product on the market, product life cycle;</i>				
<i>organization and management of sales activities at an industrial enterprise;</i>				
<i>organization of wholesale and retail trade, product distribution.</i>				
Total	0	0	32	72
Total	0	0	64	144

### Topics of exemplary practical work

Sl.№	Topic of practical (seminar) work
1	Analyze changes in the composition and structure of fixed assets, evaluate the effectiveness of their use
2	Application of depreciation methods
3	Efficiency evaluation of plant capacity
4	Rationing of working capital in an industrial enterprise
5	Assessment of working capital efficiency
6	Rationing the number of employees in an industrial enterprise
7	Assessment of staff productivity in an industrial enterprise
8	Application of remuneration forms, calculation of wages according to the tariff and tariff-free system

Sl.№	Topic of practical (seminar) work
9	Production cost calculation in industrial production
10	Application of pricing methods
11	Analysis of financial and economic activities at the enterprise
12	Assessment of economic effects commercialization
13	Calculation of investment project performance indicators
14	Formation of a system of plans at an industrial enterprise
15	Planning of innovative activities
16	Creating a business plan
17	Analyze of the company's competitive position in the market and develop of a strategy to improve it
18	Decision-making management
19	Industrial management
20	Development of management styles and staff motivation
21	Assessment of enterprise competitiveness and its product on the market
22	Marketing research and segmentation
23	Sales management at an industrial enterprise

Topics of exemplary laboratory practice – Unstipulated

Sl.№	Topic of laboratory work

## 5. ORGANIZATIONAL AND PEDAGOGICAL CONDITIONS

### 5.1. EDUCATIONAL TECHNOLOGIES USED FOR COMPETENCES FORMATION

Holding lectures in the discipline is 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.

Laboratory classes are based on an interactive learning method in which students communicate not only with the teacher but also with each other. At the same time, students' activity in the learning process dominates. The teacher's place in interactive classes is reduced to orienting students' activities to achievement of the goals of studies.

Interactive lectures, group discussions, role-playing games, training sessions, and analysis of situations and simulation models are used in academic studies.

## 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 unit 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, laboratory works and individual complex tasks for self-work.
4. The topic of questions studied individually is given by the teacher at the lectures. Also the teacher refers to the literary resources (first of all, to the newly published in periodicals) in order the students understand the problems touched on the lectures in detail.

## 6. LIST OF TEACHING MATERIALS AND INFORMATION SUPPLY FOR STUDENTS' SELF WORK IN THE DISCIPLINE

### 6.1. PAPER-BASED COURSEWARE

Sl.№	Bibliographic entry (author, title, mode of publication, place, publishing house, year of publication, number of pages )	Number of copies in the library
<b>1. Basic literature</b>		
1	Sheveleva S.A. Elementary Economics and Business. M., 2018.	31
2	Sheveleva S.A. English on Economics : M., UNITY, 2005. 405 p.	43
<b>2. Additional literature</b>		
<b>2.1. Educational and scientific literature</b>		
1	Khalilova L. English for Students of Economics. M.: Forum, 2008. 382 p.	2
2	Perlova I. and all. Mr. Berger's Business Tour (from Japan .. to Brazil): Perm: PSTU, 2008. 55 p.	7
<b>2.2. Standardized and Technical literature</b>		
<b>3. Students' manual in mastering discipline</b>		
<b>4. Teaching and learning materials for students' self work</b>		



## 6.2. ELECTRONIC COURSEWARE

Kind of literature	Name of training tool	Reference to information resource	Accessibility of EBN (Internet/local net; authorized free assess )
Additional literature	Potsepay S., Rezunova M., Vaskina T. ECONOMICS: Briansk, 2018.	URL: <a href="https://elib.pstu.ru/Record/lanRU-LAN-BOOK-133083">https://elib.pstu.ru/Record/lanRU-LAN-BOOK-133083</a>	authorized free assess
Additional literature	Federov B, Nekhaev O., Economics and Management in the Modern World : Voronej, 2019.	URL: <a href="https://elib.pstu.ru/Record/iprbooks93308">https://elib.pstu.ru/Record/iprbooks93308</a>	authorized free assess

## 6.3. LICENSE AND FREE DISTRIBUTED SOFTWARE USED IN THE COURSE EDUCATIONAL PROCESS

Type of Software	Software branding
OS	Windows 10 (Azure Dev Tools for Teaching)
Office Applications	Adobe Acrobat Reader DC
Image processing software	Corel Corel DRAW Suite X4
General purpose application software	Mathematical Professional Version(license L3263-7820*)
General purpose application software	Microsoft Office Visio Professional 2016 (Azure Dev Tools for Teaching)
General purpose application software	WinRAR (license №879261.1493674)
Management systems for projects, research, development, design, modeling and implementation	Autodesk AutoCAD 2019 Education Multi-seat Stand-alone

## 6.4. MODERN PROFESSIONAL DATA BASES AND INQUIRY SYSTEMS USED IN THE COURSE EDUCATIONAL PROCESS

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

## 7. LOGISTICS OF THE COURSE EDUCATIONAL PROCESS

Type of classes	Name of the necessary basic equipment	Number of units
Practice	projector apparatus	1

## 8. FUND OF THE COURSE EVALUATING TOOLS

Described in a separate document

Ministry of Science and Higher Education of the Russian Federation  
Federal State Budgetary Educational Institution of Higher Education  
**Perm National Research Polytechnic University**

## **FUND OF ESTIMATING TOOLS**

**For students' midterm assessment in the discipline  
"Business and economics"  
*Supplement to the Academic Course Working Program***

<b>Training program</b>	21.03.01 Oil and Gas Engineering
<b>Direction (specialization) of educational program</b>	Oil and Gas Engineering
<b>Graduate qualification</b>	Bachelor's degree
<b>Graduate academic chair</b>	Oil and Gas Technology
<b>Form of study</b>	Full-time studies
<b>Year (-s): 3</b>	<b>Semester (-s): 5, 6</b>
<b>Workload:</b> in credits: 6 CU in hours: 216 h	
<b>The form of midterm assessment:</b> Test 5, 6 semesters	

**Fund of estimating tools** for midterm assessment of students' learning the subject "Business and economics" is the part (supplement) to the academic course working program. Fund of estimating tools for midterm assessment of students' learning the discipline has been developed in accordance with the general part of the fund of estimating tools for midterm assessment of the basic educational program which determines the system of the midterm assessment results and criteria of putting marks. Fund of estimating tools for midterm assessment of students' learning the subject determines the forms and procedures of monitoring results and midterm assessment of the subject leaning by the students.

### 1. LIST OF CONTROLLED RESULTS OF STUDYING DISCIPLINE, OBJECTS OF ASSESSMENT AND FORMS OF CONTROL

According to the Academic Course Working Program mastering course content is planned during two semesters (the fifth and sixth semesters of curriculum) and is divided into four educational modules. Classroom activities, lectures and practical work as well as students' self-work are provided for every module. In the frames of mastering course content such competences as *to know*, *to be able*, *to master* pointed out in the ACWP are formed. These competences act as the controlled results of learning the discipline "Business and economics" (Table 1.1).

Monitoring of the acquired knowledge, abilities and skills is made in the frames of continuous assessment, progress check and formative assessment in the process of studying theoretical material, reports on practical works and during examination. Types of control is given in Table 1.1

Table 1.1 – List of controlled results of learning the discipline

Controlled results of learning the discipline (KAS)	Type of control					
	Continuous assessment		Progress check		Formative assessment	
	D	AC	LWR/PWR	T/CW	Test	Grading test
1	2	3	4	5	6	7
<b>Acquired knowledge</b>						
K.1 Knows how to search, to make critical analysis and synthesis of industry technical and economic information for feasibility study aimed at solution of the given professional tasks	D1 D2			CW1 CW2	TQ	
K.2 Knows economic, managerial and market approaches to the problems statement aimed at the achievement of the given target, possesses economic knowledge in choice of optimal ways of their solution; realizes the basic principles of economy operation as well as the economic development, the aims and forms of the state interest in the economy.	D3 D4			CW3 CW4		TQ

1	2	3	4	5	6	7
<b>Acquired abilities</b>						
A.1 Is able to apply systemic approach on the basis of search, critical analysis and synthesis of industry technical and economic information aimed at solution of science-oriented problems of professional field			PWR 1-13	CW1 CW2	CT	
A.2 In terms of the current legal regulations, available resources and restrictions is able to choose economically optimal ways of solution of science-oriented tasks in professional field aimed at achievement of the given target; uses the methods of individual economic and financial planning aimed at achievement of the current and long-term financial goals in the current market environment.			PWR 14-23	CW3 CW4		CT
<b>Mastered skills</b>						
S.1 Masters the skills of search, synthesis and critical analysis of technical and economic information in his professional field; systemic approach aimed at solution of the given tasks at an industrial enterprise from an economic point of view			PWR 1-13		CT	
S.2 Masters the skills of determining economically justified scope of professional tasks in the frames of the given target aimed at commercialization of innovations; the skills of the choice of economically optimal ways of their solution considering the current legal regulations and available resources and market conditions as well; the skills to use financial instruments for managing personal finances (personal budget), to control personal economic financial risks			PWR 14-23			CT

*D – topic discussion; AC – colloquium (discussion of theoretical material, academic conference); CT – case-task (individual task); LWR – report on laboratory work; PWR – report on practical work; T/CW – progress check (control work); TQ – theoretical question; PT – practical task; CT – complex task of grading test.*

Final assessment of the learned discipline results is the midterm assessment which is made in the form of test taking into consideration the results of the running and progress check.

## **2. TYPES OF CONTROL, STANDARD CONTROL TASKS AND SCALES OF LEARNING RESULTS ASSESSMENT**

Continuous assessment of the academic performance is aimed at maximum effectiveness of the educational process, at monitoring students' specified competencies formation process, at increase of learning motivation and provides

the assessment of mastering the discipline. In accordance with the regulations concerning the continuous assessment of the academic performance and midterm assessment of students taught by the educational programs of Higher education – programs of the Bachelor’s Course, Specialists’ and Master’s Course the next types of students’ academic performance continuous assessment and its periodicity is stipulated in PNRPU:

- acceptance test, check of the student’s original preparedness and his correspondence with the demands for the given discipline learning;
- continuous assessment of mastering the material (the level of mastering the component “to know” defined by the competence) at every group studies and monitoring of lectures attendance;
- interim and progress check of students’ mastering the components “to know” and “to be able” of the defined competences by computer-based or written testing, control discussions, control works (individual home tasks), reports on laboratory works, reviews, essays, etc.

Discipline progress check is conducted on the next week after learning the discipline module, while the interim control is made at every monitoring during the discipline module study;

- interim assessment, summarizing of the current students’ performance at least once a semester in all disciplines for every training program (specialty), course, group;
- retained knowledge control.

## 2.1. CONTINUOUS ASSESSMENT OF EDUCATION

Continuous assessment of learning is made in the form of discussion or selective recitation on every topic. According to the four-point system the results of assessment are put into the teachers’ note-book and are considered in the form of integral marks in the process of the midterm assessment.

## 2.2. PROGRESS CHECK

For the complex assessment of the acquired knowledge, abilities and skills (Table 1.1) progress check is carried out in the form of report on practical works and midterm control works (after learning every discipline module).

### *2.2.1. Presentation of practical work*

It is planned 23 reports on practical works all in all. Standard topics of practical work are given in ACWP.

Presentation of practical work is made by the student individually or by the group of students. Standard scale and criteria of assessment are given in the general part of FET of the educational program.

### ***2.2.2. Midterm control work***

According to ACWP 4 midterm control works (CW) is planned to be realized after learning the educational modules of the discipline by the students.

The first CW is realized with respect to the module 1 “Rationing and evaluating the efficiency of using resources of an industrial enterprise”, the second CW – with respect to the module 2 “Fundamentals of economic analysis in an industrial enterprise”, the third CW – with respect to the module 3 “Planning of economic activity at an industrial enterprise and technological entrepreneurship”, the fourth CW – with respect to the module 4 “Industrial enterprise management”.

#### **Standard tasks of the first CW:**

1. Industry-specific classification of fixed capital
2. Industry indicators of labor productivity

#### **Standard tasks of the second CW:**

1. Cost price calculation
2. Financial soundness indicators

#### **Standard tasks of the third CW:**

1. Principles and methods of forming an investment project for industrial production.
2. Content features of business plan sections for the commercialization of scientific and technical innovations

#### **Standard tasks of the fourth CW:**

1. Types of organizational and managerial structures.
2. Methods of market demand research

Standard scale and criteria of the results of the midterm control work assessment are given in the general part of FET of the educational program.

### **2.3. FULFILLMENT OF THE COMPLEX INDIVIDUAL SELF-WORK TASK**

Individual complex tasks for the students are used for assessment of their skills and abilities acquired in the process of learning the discipline in which the course project or course paper is not stipulated.

Standard scale and criteria of assessment of the individual complex task presentation are given in the general part of FET of the educational program.

### **2.4. MIDTERM ASSESSMENT (FINAL CONTROL)**

Admission for midterm assessment is made according to the results of continuous assessment and progress check. Preconditions for admittance are successful presentation of all practical works and positive integral estimation with respect to the results of continuous assessment and progress check.

### ***2.4.1. Midterm assessment procedure without additional evaluation testing***

Midterm assessment is made in the form of a test. Credit on the discipline is based on the results of the previously fulfilled by the student individual tasks on the given discipline.

Criteria of putting the final mark for the components of competences in the process of midterm assessment made in the form of test are given in the general part of FET of the educational program.

### ***2.4.2. Midterm assessment procedure followed by evaluation testing***

In definite cases (for example, in case of re-attestation of the discipline) midterm assessment in the form of the test on this discipline can be made as the ticket-based evaluation test. Every ticket includes theoretical questions(TQ) aimed at control of the acquired knowledge, practical tasks (PT) aimed at mastered abilities, and complex tasks (CT) aimed at control of the acquired skills of all declared competences.

The ticket is formed so that the included questions and practical tasks could estimate the level of maturity of **all** declared competences.

#### **2.4.2.1. Standard questions and tasks the discipline testing**

##### **Standard questions for the acquired knowledge control:**

1. Application of depreciation methods
2. Assessment of working capital efficiency
3. Rationing the number of employees in an industrial enterprise
4. Economic effectiveness assessment of using new technological processes.
5. Formation of a plan system at an industrial enterprise
6. Methods of motivation and personnel management

##### **Standard questions and practical tasks for the mastered abilities control:**

1. Calculate the structure and movement of fixed assets.
2. Determine the working capital rate by the elements of its normalized part.
3. Calculate the rate of the number of production personnel based on the specified production program and labor productivity standards.
4. Create a sales plan for an industry company based on data from the marketing service.

##### **Standard complex tasks for the acquired skills control:**

1. Conduct a comprehensive analysis of the financial and economic activities of an industrial enterprise based on accounting data and cost calculation.
2. Make a business plan for setting up a new company's product.
3. Develop a set of measures to motivate the staff of an industrial enterprise.

#### **2.4.2.2. Scales of test assessment of educational achievements**

Evaluation of discipline achievements in the form of maturity level of the components *to know, to be able, to master the* declared competences is made according to the four-point assessment scale.

Standard scale and criteria of estimating educational achievements in the process of testing for the components *to know, to be able, to master* are given in the general part of FET of educational program.

### **3. ASSESSMENT CRITERIA FOR COMPONENTS AND COMPETENCES LEVEL OF MATURITY**

#### **3.1. ASSESSMENT OF COMPETENCES COMPONENTS LEVEL OF MATURITY**

While estimating the level of competences maturity by selective control in the process of testing it is considered that *the mark obtained for the components of the examined competence is combined with the corresponding component of all competences formed in the frames of the given academic course.*

General assessment of maturity level of all competences is made by aggregation of marks obtained by the student for each component of the formed competences taking into account the results of continuous assessment and progress check in the form of integral mark according to the four-point scale. All control results are put into the assessment sheet by the teacher according to the results of midterm attestation.

The form of the assessment sheet and requirements for its completion are given in the general part of FET of the educational program.

While making the final assessment of the midterm attestation in the form of test standard criteria given in the general part of FET of the educational program are used.