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**Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University**

Higher School of Management

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Enterprise Finance and Investment in Engineering Management

course title

Recommended by the Didactic Council for the Education Field of:

38.04.02 Management

field of studies / speciality code and title

The study of the discipline is conducted as part of the professional program of higher education.

Engineering Management

higher education programme profile/specialisation title

1. COURSE GOAL(s)

Possible wording

The goal of mastering the *Enterprise Finance and Investment in Engineering Management* discipline to build and develop the professional competence in the area of financial analysis and corporate finance, the support and development of competencies.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Possible wording

The mastering of the *Enterprise Finance and Investment in Engineering Management* discipline envisages building the following competencies (parts of competencies) in students:

Table 2.1. List of competences that students acquire through the course study

Competence Code	Competence Descriptor	Competence Formation Indicators (within this discipline)
GC-1	Ability to perform critical analysis of problematic situations based on the systemic approach and to develop a plan of action	GC-1.1 Analyzes the task and singles out its basic components GC-1.2 Defines and prioritizes the information needed to solve the task GC-1.3 Searches the information to solve the task by various types of queries GC-1.4 Offers solutions to the problem, analyzes the possible consequences of their use GC-1.5 Analyzes the ways of solving problems of worldview, moral and personal nature based on the use of fundamental philosophical ideas and categories in their historical development and socio-cultural context
GPC-1.	Capability to solve professional tasks based on knowledge (at an advanced level) of economic, organizational and managerial theory, innovative approaches, generalization and critical analysis of management practices.	GPC-1.1 Has fundamental knowledge in management GPC-1.2 Can apply the fundamental knowledge of economic, organizational and managerial theory for the successful work GPC-1.3 Applies innovative approaches to solve management tasks, considering the generalization and critical analysis of best management practices GPC-1.4 Has the skills of an informed choice of methods for solving practical and research problems
GPC-2.	Capability to apply modern techniques and methods of data collection, advanced methods of their processing and analysis, including the use of smart information and analytical systems, in order to solve management and research tasks.	GPC-2.1 Masters modern techniques and methods of data collection, search, processing, analysis and evaluation of information for management problems solving GPC-2.2 Analyzes and simulates management processes in order to optimize the organization's activities GPC-2.3 Uses modern digital systems and methods in solving management and research problems solving
GPC-6.	Can critically evaluate the possibilities of digital technologies for solving professional tasks, work with digital data, evaluate their sources and relevance	GPC-6.1 Masters digital technologies for the successful solution of professional challenges GPC-6.2 can work with digital data, evaluate their sources and relevance GPC-6.3 Can use general or specialized application software packages designed to perform professional tasks

Competence Code	Competence Descriptor	Competence Formation Indicators (within this discipline)
PC-1	Capability to manage the efficiency of an investment project	PC-1.1 Defines the operations and their sequence to implement the investment project. PC-1.2 Evaluates operational, estimates human resources and determines the participants in the investment project PC-1.3 Plans the implementation stages of the investment project, ensures the quality and quality control of the investment project implementation PC-1.4 Can work in specialized computer programs for the preparation and implementation of an investment project PC-1.5 Can search the necessary information for the preparation and implementation of an investment project PC-1.6 Can identify and assess the degree (level) of an investment project risks and develop measures to manage them
PC-2	Capability to assess the business opportunities of an organization necessary for strategic changes in the organization	PC-2.1 Can identify, analyze and evaluate inconsistencies between the parameters of the current and future organization states PC-2.2 Can present business analysis information in various ways and in various formats for discussion with stakeholders PC-2.3 Apply information technology to the extent necessary for the business analysis goals

3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The *Enterprise Finance and Investment in Engineering Management* discipline is an elective block formed by students.

Within the higher education program students also take other disciplines and/or internships that contribute to the achievement of the expected learning outcomes as results of mastering the *Enterprise Finance and Investment in Engineering Management* discipline.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

Competence Code	Competence Descriptor	Previous Disciplines/Modules, Practices*	Subsequent Disciplines/Modules, Practices*
GC-1	Ability to perform critical analysis of problematic situations based on the systemic approach and to develop a plan of action	Managerial Economics Methodology of Management Problems Research	Accounting in Engineering Management Master's Degree R&D Pre-graduation Practice
GPC-1.	Capability to solve professional tasks based on knowledge	Managerial Economics	Master's Degree R&D Pre-graduation Practice

	(at an advanced level) of economic, organizational and managerial theory, innovative approaches, generalization and critical analysis of management practices.	Management Organization Theory	Preparing for defense and defense of the degree thesis
GPC-2.	Capability to apply modern techniques and methods of data collection, advanced methods of their processing and analysis, including the use of smart information and analytical systems, in order to solve management and research tasks.	Modern Strategic Analysis	Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
GPC-6.	Can critically evaluate the possibilities of digital technologies for solving professional tasks, work with digital data, evaluate their sources and relevance	Managerial Economics	Agile Project Management Master's Degree R&D Pre-graduation Practice Preparing for defense and defense of the degree thesis
PC-1	Capability to manage the efficiency of an investment project	Accounting in Engineering Management	Flexible Project Management Pre-graduation Practice Preparing for defense and defense of the degree thesis
PC-2	Capability to assess the business opportunities of an organization necessary for strategic changes in the organization	Managerial Economics	Pre-graduation Practice Preparing for defense and defense of the degree thesis

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline is 3 credits.

*Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)**

Type of Educational Work	TOTAL, academic hours.	Semester(s)			
		1	2	3	4
<i>Contact Work, academic hours.</i>	36		36		
Lectures (LC)	18		18		

Type of Educational Work		TOTAL, academic hours.	Semester(s)			
			1	2	3	4
Laboratory Work (LR)						
Practical/seminar classes (PC)		18		18		
<i>Autonomous Work of students, academic hours.</i>		54		54		
<i>Control (exam /graded credit), academic hours.</i>		18		18		
Total Workload of the Discipline	academic hours	108		108		
	credits	3		3		

5. COURSE CONTENTS

5.1. Content of the Section of the Discipline

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Fundamentals of Financial Analysis	Corporation financial management system. Financial instruments and financial markets. Fundamentals of financial mathematics. The time value of money. Discounting and building up. Annuity. The cost of financial tools. Analysis of financial activity. Fundamentals of financial accounting. Analysis of financial statements. Diagnostics of the financial condition. Financial ratios.	Lecture, self study
Short-Term Financial Solutions. Equity Management.	Analysis and assessment of needs in equity. Equity management policy. Planning the duration of the operational cycle. Equity financing. Spontaneous financing. Short-term loans. Cash flow management. Interaction with banks. Forecasting cash flows. Inventory management and control. Ways to improve the efficiency of the supply chain.	Lecture, self study
Capital Investment Planning	Formation of the capital investment budget. Methods of project evaluation. Net present value (NPV). Internal Rate of Return (IRR). Comparison of NPV and IRR criteria. The present value of future costs. Change in the price of capital. Change of net circulating capital. The impact of taxes. Liquidation value.	Lecture, self study
Sources of Corporate Financing.	The components of capital and their price. The price of the "debt capital" source. The price of the "preferred shares" source. The price of the "retained surplus" source. The price of the "common stock of the new issue" source . A model for assessing the profitability of financial assets. Weighted average and marginal cost of capital.	Lecture, self study

	Capital structure theory Costs associated with financial difficulties and agency costs. Models of financial leverage. Calculation of the optimal capital structure. Managing the capital. Models of sustainable growth. Production and financial leverage. Production and financial risks in the context of general risk.	
Dividend Policy.	Dividend Policy. Theories of dividend preference. Dividend reinvestment plans. Stock buyback. Payment of dividends by shares and splitting of shares.	Lecture, self study
Financial Planning and Forecasting.	Principles of financial planning. The system of forecasts and plans of the organization. Methods of planning and forecasting. Budgeting as an organization's financial management tool.	Lecture, self study

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Lecture	A lecture hall for lecture-type classes, equipped with a set of specialised furniture; board (screen) and technical means of multimedia presentations.	no
Lab work	A classroom for laboratory work, individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and machinery.	no
Seminar	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	no
Computer Lab	A classroom for conducting classes, group and individual consultations, current and mid-term assessment, equipped with personal computers (in the amount of ____pcs), a board (screen) and technical means of multimedia presentations.	no
Self-studies	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment.	419

* The premises for students' self-studies are subject to **MANDATORY** mention

Electronic educational materials used in the teaching process, multimedia presentations, a bank of test tasks, etc. are provided on the Web-local portal.

The following equipment is used for conducting classes:

- classroom whiteboard – 1 pc.;
- multimedia projector – 1 pc.;
- screen – 1 pc.;
- personal computers (laptops, tablets) for practical training.

Description of the classrooms where classes are held

No	Actual address of classrooms and facilities	List of main equipment
1.	Miklukho-Maklay st., 6, room 419	multimedia projector, screen, classroom whiteboard

7. RESOURCES RECOMMENDED FOR COURSE STUDY

a) Main Readings:

1. Financy [Finance] : textbook and workshop for universities / L. A. Chaldaeva [et al.] ; edited by L. A. Chaldaeva. — 3rd ed., reprint. and add. — Moscow : Yurayt Publishing House, 2023. - 491 p. — (Higher education). — ISBN 978-5-534-13954-9. — Text : electronic // Educational platform Yurayt [website]. — URL: <https://urait.ru/bcode/511050>

2. Financy [Finance]: textbook for universities / T. P. Belyaeva [et al.] ; edited by N. G. Ivanova. — Moscow : Yurayt Publishing House, 2021. — 449 p. — (Higher education). — ISBN 978-5-534-13894-8. — Text: electronic // EBS Yurayt [website]. — URL: <https://urait.ru/bcode/467206>

b) Additional Readings:_

1. *Ovechkina, A. I.* Korporativnye financy [Corporate Finance]. Workshop : textbook for universities / A. I. Ovechkina, N. P. Petrova. — Moscow : Yurayt Publishing House, 2021. - 227 p. — (Higher education). — ISBN 978-5-534-05354-8. — Text : electronic // EBS Yurayt [website]. — URL: <https://urait.ru/bcode/473371>

2. Financy [Finance] : textbook / A. P. Balakina, I. I. Bablenkova, I. V. Ishina, etc . ; edited by A. P. Balakina, I. I. Bablenkova. — Moscow : Dashkov and Co., 2017. - 383 p. : ill. — (Educational publications for bachelors). — Access mode: by subscription. — URL: <https://biblioclub.ru/index.php?page=book&id=454074>

3. Voronin, V. G. Financy investitsionnogo i innovatsyonnogo protsessov [Finance of investment and innovation processes]: textbook : [16+] / V. G. Voronin, E. A. Schtele. — Moscow ; Berlin : Direct-Media, 2015. — 206 p. : ill., schematics, table. — Access mode: by subscription. — URL: <https://biblioclub.ru/index.php?page=book&id=363987> (accessed: 06/18/2021). — Bibliogr.: p. 191. — ISBN 978-5-4475-4911-4. — DOI 10.23681/363987.

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION

The assessment materials and the grading system* to evaluate the graduate's level of competences (part of competences) formation as the results of the **Modern Strategic Analysis** discipline are specified in the Appendix to course syllabus.

* - The assessment materials and the grading system are formed on the basis of the requirements of the relevant local regulation of RUDN University.

95-100	Excellent A
86-94	Excellent B
69-85	Good C
61-68	Satisfactory D
51-60	Satisfactory E

31-50
0-30

Conditionally unsatisfactory FX
Unsatisfactory F

DEVELOPERS:

Associate Professor of the
Applied Economics Department

Position, educational department

Signature

V.A. Ermakov

Name, surname

HEAD OF EDUCATIONAL DEPARTMENT:

Deputy Head of the Applied

Economics Department

Name of the educational department

Signature

A.A. Ostrovskaya

Name, surname

HEAD OF HIGHER EDUCATION PROGRAMME:

Head of the Applied Economics Department

position, department

A.A. Ostrovskaya

name and surname

Methodological guidelines for students on mastering the discipline (module)

The implementation of the course provides interactive lectures, practical classes (colloquiums) using multimedia equipment, preparation of autonomous creative projects and their subsequent presentations, testing, group discussions on the subject of the course, modern knowledge control technologies.

While studying the discipline, the student must attend a course of lectures, participate in the number of colloquiums provided by the course syllabus, study autonomously some topics of the course and confirm their knowledge during control activities.

The student's work in lectures consists in clarifying the basics of the discipline, briefly taking notes of the material, and clarifying issues that cause difficulties. The lecture notes are the basic educational material along with the textbooks recommended in the main list of readings.

The teaching of the main part of the lecture material involves usage of multimedia tools that facilitate the comprehension and consolidation of the material. Presentations are available for download from the RUDN website and can be freely used by students for educational purposes.

The student must master all the topics provided for by the educational and thematic plan of the discipline. Individual topics and training issues must be mastered autonomously. The student studies the recommended literature, briefly outlines the material, and clarifies the most difficult questions that require clarification during consultations. The same should be done with sections of the course that were skipped due to various circumstances.

For an in-depth study of the issue, the student should study the literature from the additional readings list and specialized websites. It is also recommended that students communicate in professional community forums.

Students study educational, scientific literature and periodicals on an autonomous basis. They have the opportunity to discuss what they have read with the teachers of the discipline during scheduled consultations, with other students at colloquiums, as well as at lectures, asking the professor questions.

The control of autonomous work is carried out by the professor in charge. Depending on the teaching methodology, the following forms of continuous assessment can be used: a short oral or written survey before the start of classes, tests, control papers, written homework, essays, etc.

12. The toolkit for the midterm assessment of students in the discipline (module) (developed and issued in accordance with the requirements of the "Regulations for the Formation of Assessment Toolkit (FOS)", approved by the Rector's order No. 420 dated 05.05.2016).

The code of the controlled competence or its part	Controlled Discipline Section	Controlled Discipline Topic	Assessment Toolkit (forms of control of mastering the professional program)										Scores Topics	Section Scores
			Classroom Work					Autonomous Work						
			Survey	Test	Colloquium	Control Paper	Discussion	Essay	Homework	Report	Creative Project	Course Paper / project	Exam/Test	
GC-1 GPC-1, GPC-2, GPC-6, PC-2	Fundamentals of Financial Analysis Short-Term Financial Solutions. Equity Management. Capital Investment Planning	System concepts in practical activities Evolution of system representations. General definition of the system. Examples of systems. A brief description of the system. General properties of systems. Classification of systems. Ashby's Law of Requisite Variety.					1						1	8
		Signs of the system. Classification of systems. Types of system topology.				4		2					6	
		The emergence of system analysis. The concept of a systematic approach. General System Theory (theory of systems) by Ludwig von Bertalanffy. Isomorphism of the laws governing the functioning of systems is the main				1							1	

		idea of the General System Theory proposed by Bertalanffy.													
GC-1 GPC-1, GPC-2, GPC-6, PC-2	Sources of Corporate Financing. Dividend Policy.	Types of technical systems. Minimal technical system.	4											4	10
		The law of increasing the degree of ideality of the system. The law of S-shaped development of technical systems. The law of dynamization.					4							4	
		The law of completeness of the system parts. The law of the through passage of energy. The law of advanced development of the working body. The law of "mono — bi — poly" transition. The law of transition from the macro to the micro level.	2											2	
GC-1 GPC-1, GPC-2, GPC-6, PC-2	Fundamentals of Financial Analysis Short-Term Financial Solutions. Equity Management.	Choice as the realization of the systems purpose. Criterion language of choice description Formulation of optimization problems and their classification.					2							2	6
		Fundamentals of the analytical hierarchical process The ANR three main functions Axioms of ANR					4							4	
GC-1	Capital Investment Planning	Choice as the realization of the systems purpose.				6	4							10	12

GPC-1, GPC-2, GPC-6, PC-2	Sources of Corporate Financing.	Criterion language of choice description												
		Formulation of optimization problems and their classification. Fundamentals of the analytical hierarchical process The ANR three main functions Axioms of ANR	2											2
GC-1 GPC-1, GPC-2, GPC-6, PC-2	Dividend Policy.	Example of setting an optimization challenge Linear Programming (LP). Geometric method. The Symplex method					2							2
		Methods to solve nonlinear software problems. Geometric interpretation Nonlinear programming					2							2
GC-1 GPC-1, GPC-2, GPC-6, PC-1, PC-2	Fundamentals of Financial Analysis	Reducing a multi-criteria task to a single-criteria one					2							2
		Conditional maximization Search for an alternative with the specified properties					6							6
		Finding the Pareto set					2							2
GC-1 GPC-1, GPC-2, GPC-		Milestone Certification (Control Paper)				20								20

6, PC-2															
GC-1 GPC-1, GPC-2, GPC-6, PC-2		Exam											30		30
		TOTAL	25	10		20	10		15	10			30		100

Discipline Enterprise Finance and Investment in Engineering Management

(name of the discipline)

EXAMINATION CARD No. 1

1. Liquidity ratios
2. Financial and operational leverage.
3. Problem.

The company's net profit after taxes is 120,000 rubles. The share capital is 1,300,000 rubles. Determine the return on equity ratio.

Compiled by _____ V.A. Ermakov
(signature)

Head of the department _____ A.A. Chursin
(signature)

« ____ " _____ 2021

Discipline Enterprise Finance and Investment in Engineering Management

(name of the discipline)

EXAMINATION CARD No. 2

1. Basic forms of financial statements
2. Horizontal and vertical analysis
3. Problem.

The company received 172,000 rubles. of operating profit (EBIT). Interest paid in the amount of 22,000 rubles. Dividends in the amount of 42,000 were paid. Determine the taxable profit.

Compiled by _____ V.A. Ermakov
(signature)

Head of the department _____ A.A. Chursin
(signature)

« ____ " _____ 2021

Discipline Enterprise Finance and Investment in Engineering Management

EXAMINATION CARD No. 3

1. Analysis of investment projects
2. Cash flow management.
3. Problem.

The gross profit of the company is 612,000 rubles. The net sales volume is 2,200,000 rubles.
Determine the gross margin ratio.

Compiled by _____ V.A. Ermakov (signature)

Head of the department _____ A.A. Chursin (signature)

« ____ " _____ 2021

This Program has been developed in line with the requirements of the RUDN University Educational Standards.