



Economic Risks and Methods of their Measurement

Work program of the discipline (Syllabus)

Details of the discipline

Level of higher education	<i>First (bachelor's)</i>
Field of knowledge	<i>05 "Social and behavioral sciences"</i>
Specialty	<i>051 "Economy"</i>
Educational program	<i>Economics and business enterprises</i>
Discipline status	<i>Normative</i>
Form of study	<i>daily</i>
Year of preparation, semester	<i>4th year, 1 semester</i>
The scope of discipline	<i>120 hours</i>
Semester control / control measures	<i>exam</i>
Lessons schedule	<i>http://rozklad.kpi.ua/Schedules/ScheduleGroupSelection.aspx</i>
Language of instruction	<i>Ukrainian</i>
Information about course leader / teachers	Lecturer: Ph.D., Associate Professor, Kryvda Olena Vitaliyivna, 0979374212, e-mail: elcandy@kpi.ua Practical: Ph.D., Associate Professor, Kryvda Olena Vitaliyivna, 0979374212, e-mail: elcandy@kpi.ua
Course placement	<i>https://do.ipk.kpi.ua/course/view.php?id=2400</i>

Curriculum

1. Description of the discipline, its purpose, subject of study and learning outcomes

In a market economy, when enterprises gain independence as economic entities, the formation of students' knowledge of the nature of economic risks, methods of assessing and minimizing them becomes especially important. After all, they, future specialists in the field of business economics and entrepreneurship, will find it useful to know how to clearly organize the company's activities in conditions of uncertainty and constant changes in the market environment. In the last decade, this subject has become the object of close attention, and with the beginning of economic reforms - and a subject that requires in-depth and comprehensive study in the training of economic professionals.

The course "Economic risks and methods of measuring them" belongs to a set of economic disciplines studied by students of economic specialties. It plays a significant role in the training of specialists.

The purpose of the discipline. The purpose of the discipline is to provide understanding of a wide range of economic risks arising in the course of economic activity, taking them into account in management decisions and developing measures to reduce their impact on performance indicators and its economic mechanism.

1.1. The purpose of the discipline is to form students' abilities:

- in-depth analysis of problems and phenomena in one or more professional areas, considering economic risks and possible socio-economic consequences (ФК 14);
- assess risks, model consequences and develop strategies to reduce or avoid them (ФК 26).

1.2. The **main tasks** of the credit module:

According to the requirements of the discipline program, students after mastering the credit module must demonstrate the following learning outcomes:

knowledge:

- conceptual apparatus of economic risk, the nature and nature of various types of risks, classification of risks, sources and aspects of their manifestation, functions in the enterprise (3H 114);
- general approaches to risk measurement and analysis, algorithm of managerial decision-making in the conditions of inevitable choice in the conditions of risk (3H 115);
- methods of risk analysis in investment and financial activities of the enterprise, methods of risk management and prevention of risks in the economic activities of the enterprise (3H 116).

skills:

- perform interdisciplinary analysis of socio-economic phenomena and problems in one or more professional areas, considering the risks and possible socio-economic consequences (УМ 17);
- assess the likelihood of business risks, identify the causes and propose effective measures to bring the company out of crisis (УМ 64).

2. Prerequisites and post requisites of the discipline (place in the structural and logical scheme of education according to the relevant educational program)

The course "Economic risks and methods of measuring them" is a normative discipline for students enrolled in the educational and professional bachelor's program in "Business Economics".

In the structural and logical scheme of education, this discipline is placed in the 8th semester, when students have already listened to such disciplines as "Political Economy", "Higher Mathematics", "Probability Theory and Mathematical Statistics", "Microeconomics", "Macroeconomics", "Statistics" etc. Thus, the course "Statistics" allows students to understand the following concepts: mathematical expectation, variance, standard deviation, etc.; course "Enterprise Finance" - to study the essence of finance; course "Marketing" - to understand the essence of the analysis of factors of the external marketing environment and SWOT-analysis.

3. The content of the discipline

SECTION I. ECONOMIC RISK, PRINCIPLES OF ITS CLASSIFICATION AND ASSESSMENT

1. Uncertainty as the root cause of business risk.
2. The essence of economic risks as an integral feature of entrepreneurial activity.
3. Classification and types of economic risks.
4. Theory of utility and its application in decision-making processes.

SECTION II. METHODS OF ASSESSING AND REDUCING THE IMPACT OF ECONOMIC RISKS

1. Qualitative and quantitative methods of measuring risk.
2. Fundamentals of risk management.
3. Ways to reduce economic risk.
4. Consideration of risk in making management decisions.

4. Training materials and resources

Basic literature:

1. Економічні ризики та методи їх вимірювання: навчально-методичний комплекс дисципліни [Електронний ресурс] : навч. посіб. для студ. спеціальності 051 «Економіка»,

освітньої програми «Економіка бізнес-підприємства» / КПІ ім. Ігоря Сікорського; уклад. О.В. Кривда. Електронні текстові дані (1 файл: 558 Кбайт). Київ : КПІ ім. Ігоря Сікорського, 2019. 49 с. URL: <http://ela.kpi.ua/handle/123456789/29806>.

2. Стешенко О.Д. Ризикологія: Навч. посібник. Харків: УкрДУЗТ, 2019. 180 с.
3. Економічний ризик: методи оцінки та управління : навч. посібник / [Т. А. Васильєва, С. В. Леонов, Я. М. Кривич та ін.] ; під заг. ред. д-ра екон. наук, проф. Т. А. Васильєвої, канд. екон. наук Я. М. Кривич. Суми : ДВНЗ "УАБС НБУ", 2015. 208 с.
4. Балджи М.Д. Економічний ризик та методи його вимірювання. Навчальний посібник. Харків: Промарт, 2015. 300 с.
5. Калініченко З.Д. Ризик-менеджмент: навчальний посібник для здобувачів спец. 051 «Економіка» та 073 «Менеджмент». Дніпро: ДДУВС, 2021. 224 с.

These materials can be found in the library of KPI Igor Sikorsky, at the Department of Economics and Entrepreneurship in 522 classrooms of the 7th building. These textbooks allow you to deepen and consolidate the knowledge gained in lectures and practical classes.

Additional literature:

1. Кігель В.Р. Ризикологія: теоретичні основи та прикладні задачі, моделі і методи: Навчальний посібник для студентів економічних спеціальностей. К.: Міленіум, 2017. 230 с.
2. Мороз В.М., Мороз С.А. Ризик-менеджмент: навч. посібник. Харків: НТУ «ХПІ», 2018. 140 с.
3. Robert Jarrow. The Economic Foundations of Risk Management. Theory, Practice, and Applications, 2017. 208 p. URL: <https://doi.org/10.1142/10221>.
4. Обґрунтування господарських рішень і оцінювання ризиків: Практичні заняття [Електронний ресурс] : навч. посіб. для студ. спеціальності 051 «Економіка» спеціалізації «Економіка підприємства» / КПІ ім. Ігоря Сікорського; уклад. О.В. Кривда, Н.А. Шевчук. Електронні текстові дані (1 файл: 107 Кбайт). Київ : КПІ ім. Ігоря Сікорського, 2018. 48 с.
5. Обґрунтування господарських рішень і оцінювання ризиків. Методичні рекомендації до виконання розрахункового індивідуального завдання за напрямом підготовки 6.030504 Економіка підприємства для студентів всіх форм навчання за фаховим спрямуванням бакалавра для спеціальності 6.030504 «Економіка підприємства» / Уклад. Кривда О.В. К.: КПІ, 2017. 14 с.

According to the topics studied in lectures and practical classes, students should get acquainted with the relevant provisions of legislative and regulatory documents.

Educational content

6. Methods of mastering the discipline (educational component)

№ п/п	The title of the lecture and a list of key issues
1	Uncertainty as the root cause of business risk. The concept of uncertainty. Causes of uncertainty. Uncertainty and science. Decision making in conditions of uncertainty and risk.
2	The essence of economic risks as an integral feature of entrepreneurial activity. Determination of economic risk. Subjective and objective aspects of risk. Risk structure. Risk factors. Propensity to risk and vulnerability. Risk classification. Features of risk in modern conditions. Causes of economic risk. Risk and success. Risk factors. Risk functions in business.
3	Classification and types of economic risks. Net risks: natural, environmental, political, technical, industrial, commercial, innovative, business, risks of venture operations, operational, the risk of purchasing raw

	materials. Speculative risks: financial risk and aspects of its manifestation. Risks of foreign economic activity. Non-commercial risks. Financial and commercial risks.
4	Personal attitude of people to risk. Elements of utility theory and their application to assess people's attitudes to risk. Types of people identified by risk. Risk pay. Reward for risk. Managers and their behavior at risk.
5	Qualitative risk analysis. Types of risk analysis and its components. Factors determining economic risks. Risk zones and levels. The relationship between profit and risk. General principles and methods of qualitative risk assessment Systemic risk analysis in economics and business. The process of making economic decisions based on risk. Risk analysis of the enterprise on the basis of indicators of financial condition. Risk factors. Characteristics of the main risk areas. Causes of the main types of economic risks.
6	Quantitative risk analysis. Method of analogies. Sensitivity analysis. Risk analysis by simulation methods. Risk analysis of possible losses. General approaches to quantitative risk assessment. Probability as one of the approaches to assessing the degree of risk. Quantitative indicators of the degree of risk in absolute terms. Quantitative indicators of the degree of risk in relative terms. Probable losses in the course of business activities. Degree of risk. System of indicators of absolute and relative risk measurement. Risk curve and the process of its construction. Methods of quantitative risk assessment. Advantages and disadvantages of the main methods of quantitative assessment of business risks.
7	Fundamentals of risk management General provisions of risk management and its structural scheme. Development of the concept of risk management. Methods of economic risk management and evaluation of their effectiveness. Strategic planning and forecasting of economic risk at the enterprise.
8	Methods of measuring economic risks to reduce the degree of risk. Basic techniques for reducing the degree of risk. Risk diversification, its types, areas of application. Transfer (transfer) of risk. Types and kinds of contracts. Insurance, its essence, types. Hedging as a form of insurance of currency and price risks. Self-insurance. Methods of formation of reserves. Limitation, its essence, scope. Acquisition of additional information to make risk reduction decisions. Other risk reduction measures.
9	Consideration of risk in management decisions Management and risk: basic concepts. Bayes and Laplace criteria. Decision-making in conditions of incomplete awareness of the characteristics of the economic environment. Risk-based decision making. Using the experiment as a risk reduction factor. Decision making in a conflict situation.

7. Independent student work

8. Practical classes and independent work

№ з/п	Topics of practical classes and a list of key issues	Tasks for independent work	Deadline
1	Uncertainty as the root cause of business risk Key issues: 1. The essence and types of uncertainty. 2. Causes of uncertainty. 3. Decision making in conditions of uncertainty and risk.	Make a reference summary of the topic. Prepare reports on the following topics: 1. Uncertainty as a source of business risks.	1-2 weeks of study

		<p>2. Features of the functioning of enterprises in conditions of uncertainty.</p> <p>3. Criteria of optimality under conditions of complete uncertainty.</p>	
2	<p>The essence of economic risk and its main types</p> <p><u>Key issues:</u></p> <p>1. The essence of the concepts of "uncertainty" and "risk".</p> <p>2. Risk factors in the economy. Objective and subjective risk factors.</p>	<p>Make a reference summary of the topic. Explain the essence of the key concepts of the topic.</p>	3-4 weeks of study
3	<p>The main types of economic risks</p> <p><u>Key issues:</u></p> <p>1. Classification of risks.</p> <p>2. Net risks.</p> <p>3. Speculative risks.</p> <p>4. Risks of foreign economic activity.</p>	<p>Make a reference summary of the topic. Analysis of other types of risk: financial, non-commercial, etc.</p>	5-6 weeks of study
4	<p>Personal attitude of people to risk</p> <p><u>Key issues:</u></p> <p>1. The concept of usefulness in decision-making tasks.</p> <p>2. Utility function.</p> <p>3. Risk reward.</p>	<p>Make a reference summary of the topic. Prepare to solve problems on the topic.</p>	7-8 weeks of study
5	<p>General principles and methods of qualitative risk assessment</p> <p><u>Key issues:</u></p> <p>1. The concept of qualitative risk assessment.</p> <p>2. General methods of risk assessment.</p>	<p>Make a reference summary of the topic. Carry out a qualitative risk analysis of the selected company.</p>	9-10 weeks of study
6	<p>Quantitative risk analysis</p> <p><u>Key issues:</u></p> <p>1. Probability as one of the approaches to assessing the degree of risk.</p> <p>2. System of indicators of absolute and relative risk measurement.</p> <p>3. Methods of quantitative risk assessment.</p>	<p>Make a reference summary of the topic. Prepare to solve problems on the topic.</p>	11-12 weeks of study
7	<p>Fundamentals of risk management</p> <p><u>Key issues:</u></p> <p>1. Features of business risk management.</p> <p>2. Directions and methods of risk regulation.</p>	<p>Make a reference summary of the topic. Prepare</p>	13-14 weeks of study

		<p>reports on the following topics:</p> <ol style="list-style-type: none"> 1. Modern directions and methods of optimizing the degree of risks of economic activity, assessing their effectiveness. 2. World experience in regulating the degree of entrepreneurial risks. 3. The essence and types of diversification, its advantages and disadvantages. 4. Problems and prospects for the implementation of risk management in domestic enterprises. 	
8	<p>Consideration of risk in management decisions</p> <p><u>Key issues:</u></p> <ol style="list-style-type: none"> 1. Management and risk. 2. Decision-making in the context of incomplete information. 3. Risk-based decision making. 	<p>Make a reference summary of the topic. Prepare to solve problems on the topic.</p>	15-17 weeks of study
9	<p>Modular test work</p>	<p>Preparation for Modular test work on all topics of the discipline</p>	18 weeks of study

The curriculum for students of the educational-professional program "Economics of Business Enterprise" provides for individual tasks in the form of calculation work (CR). Each student must independently solve the problems of CR to compile the distribution of probabilities and calculate the main quantitative indicators of risk. Estimated work is performed in accordance with the guidelines: Обґрунтування господарських рішень і оцінювання ризиків. Методичні рекомендації до виконання розрахункового індивідуального завдання за напрямом підготовки 6.030504 Економіка підприємства для студентів всіх форм навчання за фаховим спрямуванням бакалавра для спеціальності 6.030504 «Економіка підприємства» / Уклад. Кривда О.В., К.: КПІ, 2017. 14 с. (Протокол метод. ради №10 від 13.06.2017 р.). URL: <https://ela.kpi.ua/handle/123456789/23642>.

Policy and control

8. Policy of academic discipline (educational component)

- Attendance at lectures, practical classes, as well as absence from them is not evaluated, but is recommended because they teach theoretical and practical material and develop the skills necessary for the most effective development of the discipline;
 - Each student must complete the Modular test work;
 - Students should be active in each practical session;
 - If the student missed a practical lesson for good reasons (there is documentary evidence) - he has the opportunity to complete the necessary tasks and get points to the rating;
 - In case of missing pairs without good reason (without documentary proof), students are not allowed to retake the missed material and receive points for the rating;
 - RR students must pass within the period specified by the teacher;
 - In case of untimely submission of the CP, the student's penalty points are deducted;
 - In case of student's participation in conferences and writing of abstracts, articles, scientific works on the subject of the discipline - additional incentive points to the rating are provided;
 - In case of student's participation in Olympiads, national and international competitions in the discipline - additional incentive points are provided to the rating.
 - The policy and principles of academic integrity are defined in Section 3 of the Code of Honor of the National Technical University of Ukraine "Kyiv Polytechnic Institute named after Igor Sikorsky". Details: <https://kpi.ua/code>.
- Students have the right to challenge the results of the assessment of the tasks they have completed or the answers they have provided, but they must be substantiated, explaining which criteria they do not agree with according to the assessment letter and / or comments.

9. Types of control and rating system for evaluation of learning outcomes (RSE)

Rating system

student learning outcomes

from the credit module ***"Economic risks and methods of their measurement"***

educational and professional program "Business Enterprise Economics"

1. The student's rating from the credit module is calculated based on a 100-point scale, of which 59 points is the starting scale.

The starting rating (during the semester) consists of points that the student receives for:

- work on practical classes (17 classes);
- performance of CR (15 points);
- performance of Modular test work (10 points)

2. Criteria for scoring:

2.1. Work on practical classes:

- active creative work - 2 points;
- passive work - 1-0 points.
- The two best students can get an additional + 1 point.

2.2. Implementation Modular test work:

- creative work - 10-8 points;
- the work was performed with minor shortcomings - 8-5 points;
- the work is done with certain errors - 4-2 points;
- work is not credited (the task is not completed or there are gross errors) - 0 points.

2.3. Estimated work is evaluated from 15 points according to the following criteria:

- "excellent" - a creative approach to solving the problem - 15-13 points;
- "good" - deep disclosure of the problem, reflected own position - 12-8 points;
- "satisfactory" - reasonable disclosure of the problem with certain shortcomings - 7-3 points;

- "unsatisfactory" - the task is not completed, CR is not credited - 0 points.

Penalties of 2 points are accrued for each week of delay in settlement work (in total not more than 8 points). The presence of a positive assessment of the CR is a condition of admission to the examination test.

2.4. For participation in conferences at competitions the students receive in addition from 10 to 15 additional points (depending on level of action).

scoring criteria:

- Preparation and submission of abstracts to the International Conference - 10 points;
- Preparation and submission of abstracts for the Ukrainian conference - 5 points;
- Speaking at the conference and receiving a certificate of conference participant - 5 points.

1. The condition for a positive first certification is to obtain at least 25 points. The condition for a positive second certification is to obtain at least 45 points and write Modular test work and CR.
2. The condition for admission to the exam is a starting rating of at least 45 points and completed CR.

3. At the exam, students perform written tests. Each task contains two theoretical questions (tasks) and one task. The list of questions is given in Recommendations for mastering the credit module.

Each question (task) is evaluated in 15 points, task 10 according to the following criteria:

- "excellent", complete answer, not less than 90% of the required information, performed in accordance with the requirements for the level of "skills", (complete, error-free problem solving) - 15-12 points;

- "good", sufficiently complete answer, not less than 75% of the required information, performed in accordance with the requirements for the level of skills or there are minor inaccuracies (complete problem solving with minor inaccuracies) - 11-8 points

- "satisfactory", incomplete answer, not less than 60% of the required information, performed in accordance with the requirements for the "stereotypical" level and some errors (the task is performed with certain shortcomings) - 7-3 points;

- "unsatisfactory", the answer does not meet the conditions for "satisfactory" - 0 points.

6. Table of translation of rating points to grades:

point	Rating
100...95	Perfectly
94...85	Very good
84...75	good
74...65	Satisfactorily
64...60	Enough
Less than 60	Unsatisfactorily
not credited	Not allowed

8. Additional information on the discipline (educational component)

List of questions to prepare for the semester control:

1. The essence and need for risk management.
2. Entrepreneurial risk.
3. Types of risk and criteria for their classification.
4. Theoretical approaches to risk determination.
5. Features of risk in modern conditions.
6. The main characteristics of economic risk.

7. Functions of risk and features of their implementation in business.
8. Theoretical nature and consequences of environmental risks.
9. Identify the problem of complexity of risk classification.
10. Comparative analysis of statistical and dynamic risks.
11. Factors that determine the risk situation for the company.
12. Financial risks and types of their manifestation.
13. Features of commercial risks in the activities of a commercial enterprise.
14. Comparative characteristics of static and dynamic risks.
15. Production risk in the activities of an industrial enterprise.
16. Advantages and disadvantages of quantitative methods of risk assessment.
17. Characteristics of comprehensive risk assessment.
18. Comparative analysis of quantitative and qualitative methods of risk analysis.
19. Foreign experience of the method of expert evaluations.
20. Using a computer to assess risk.
21. Factors determining the choice of method of economic risk assessment.
22. Characteristics and features of quantitative methods of assessing economic risks.
23. Methods of expert assessments, features of its use for economic risk assessment.
24. Integrated economic risk assessment.
25. Integrated approach to economic risk assessment.
26. The influence of subjective factors on the assessment of economic risks of the enterprise.
27. Information support and its role in objectifying the assessment of economic risks.

Work program of the discipline (syllabus):

Compiled by Associate Professor of Economics and Entrepreneurship, Ph.D., Associate Professor, Kryvda O.V.

Approved by the Department of Economics and Entrepreneurship (Minutes № 17 of 02.06.2021)

Approved by the Methodical Commission of the Faculty of Management and Marketing (Minutes № 10 of 15.06.2021)