

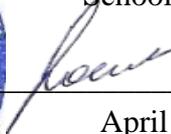


**MINISTRY OF SCIENCE AND HIGHER EDUCATION  
OF THE RUSSIAN FEDERATION**  
Federal State Budgetary Educational Institution of Higher Education  
**"IRKUTSK STATE UNIVERSITY"**  
**SAF, Baikal International Business School (Institute)**  
Strategic and Financial Management Department

APPROVED:

Dean of SAF, Baikal International Business  
School (institute)



 N.B. Grosheva

April 14, 2025

### Syllabus

Discipline Б1.В.09 Risk Management at an Innovative Enterprise

Major 27.03.05 Innovatics

Specialization: Management of Innovative and IT Projects and Products

University Degree: Bachelor

Full time

Approved by the Academic and  
Methodological Council of Baikal  
International Business School (institute)  
Protocol № 4 of March 26, 2025

Chairperson  V.M. Maksimova

Recommended by Strategic and Financial  
Management Department  
Protocol № 9 of March 21, 2025

Department  
Chair

 N.B. Grosheva

Irkutsk 2025

## Contents

	p.
I. Discipline goal and objectives	3
II. Place of the Discipline in the CPEP Structure	3
III. Requirements for the Discipline Learning Outcomes	4
IV. Contents and Discipline Structure	5
4.1. Discipline Content, Structured by Topics, with Indicated Types of Classes and Allocated Academic Hours	5
4.2. Plan for Out-of-Class Student Self-Study of the Discipline	6
4.3. Content of Educational Material	8
4.3.1. List of Practical Sessions	8
4.3.2. List of topics (questions) assigned for independent work as part of student self-study	9
4.4. Guidelines for Organizing Students' Self-Study	10
V. Educational, Methodological, and Information Support for the Discipline	11
a) main literature	
b) databases, search and reference systems, and information systems	12
VI. Material and Technical Support for the Discipline	12
6.1. Educational and Laboratory Equipment	12
6.2. Software	16
6.3. Technical and Electronic Learning Tools	17
VII. Education Technologies	17
VIII. Materials for Formative and Summative Assessment	18

## **I. Discipline Goal and Objectives**

### **Goals:**

Formation of theoretical foundations and practical skills in identifying, analyzing, and managing the complex of risks in innovation activity, as well as an understanding of economically effective management decisions for risk minimization aimed at enhancing the resilience and efficiency of an innovative enterprise at all stages of its development

### **Objectives:**

Know:

1. The specifics and classifications of innovation risks, and their distinctions from entrepreneurial risks.
2. Modern methodological tools for the identification, qualitative and quantitative assessment of risks in an innovative enterprise.
3. The specifics of key innovation risks and strategies for managing them.
4. The specifics of financial risks in innovative projects.
5. Principles of integrating risk management into the processes and operating model of an innovative company, including the allocation of roles and responsibilities.
6. Concepts of strategic risk management, methods of external environment analysis, and strategic risks.

Be able to:

1. Conduct a comprehensive risk analysis of an innovative enterprise using appropriate classifications and models.
2. Apply modern methods for identifying and assessing risks at different stages of the innovation process.
3. Develop and justify measures for managing specific types of risks in an innovative company.
4. Assess financial risks of an innovative project and calculate key indicators of financial condition.
5. Design elements of a risk management system adapted to the processes and organizational structure of an innovative company.
6. Conduct strategic analysis of external and internal risks, formulating recommendations based on it to strengthen competitive advantages and business resilience.

Have skills in:

1. Applying risk management tools in the context of innovation activity.
2. Calculating and interpreting financial indicators specific to assessing the risks of innovative projects.
3. Developing practical recommendations for integrating risk-oriented thinking into the operational and strategic management processes of an innovative enterprise.
4. Using the terminological apparatus in the field of risk management in the innovation sphere.

## **II. PLACE OF THE DISCIPLINE IN THE CPEP STRUCTURE**

The academic discipline “Б1.В.09 ” belongs to the elective part of the Bachelor's program in 27.03.05 Innovatics, specialization "Management of Innovative and IT Projects and Products", formed by participants in educational relations.

Studying this discipline requires the knowledge, skills, and abilities formed in the discipline "Entrepreneurial Risk Management".

The list of subsequent academic disciplines for which the knowledge, skills, and abilities formed by this discipline are required includes: Pre-Graduation Internship and Final Qualifying Work (Thesis).

List of subsequent academic disciplines for which knowledge, skills and abilities formed by this academic discipline are necessary: Б1.О.14 Management; Б1.О.16 Economics (Microeconomics and Macroeconomics); Б1.Б.ДБ.05.01 Business Planning.

### III. REQUIREMENTS FOR THE DISCIPLINE LEARNING OUTCOMES

The process of mastering the discipline is aimed at forming elements of the following competencies in accordance with the Federal State Educational Standard of Higher Education and the Educational Program of Higher Education in the field of study 27.03.05 Innovatics Studies, specialization "Management of Innovative and IT Projects and Products".

#### List of Planned Learning Outcomes for the Discipline, Mapped to Competency Achievement Indicators

Competency	Competency Achievement Indicator	Learning outcomes
PC-4 Capable of commission the development of project programs for creating, developing, launching to market, and selling innovative and IT products, and monitor their execution	<i>CAI PC-4.2</i> Demonstrates the ability to plan and manage programs and projects	Knows: the content, goals, objectives, and principles of developing a program and project management system; tools and methods of risk management in an innovative enterprise. Able to: make decisions under risk conditions in an innovative enterprise. Possesses: methods and techniques for analyzing economic processes using standard risk management models as applied to an innovative enterprise.

#### IV. DISCIPLINE CONTENTS AND STRUCTURE

**Discipline scope is 4 credits, 144 hrs.**

Including formative assessment 36 hrs

**Formative assessment:** examination.

##### 4.1. Discipline Content, Structured by Topics, with Indicated Types of Classes and Allocated Academic Hours

№	Discipline Section/ theme	Semester	Total hrs	Types of educational activities, including self-study, practical sessions, and workload (in hrs)				Formative Assessment Formats; Summative Assessment Format
				Teacher Contact Hrs.			Self-Study	
				Lectures	Practical Sessions	Consultations, Self-Study Monitoring, Summative Assessment		
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
1	Specifics of Risk Management in an Innovative Enterprise	8	15	2	2		11	Oral questioning, testing
2	Methods for Planning and Analyzing Innovation Risks	8	15	2	2		11	Oral questioning, testing
3	Managing Key Risks of an Innovative Enterprise	8	19	4	4		11	Oral questioning, Report
4	Financial Risks and Innovation Value Management	8	19	4	4		11	Oral questioning
5	Integrating Risk Management into Processes and the Management System	8	19	4	4		11	Oral questioning
6	Strategic Risk Management of an Innovative Enterprise	8	21	4	4	2 cons.	11	Oral questioning, Report
7	Interm assessment	8				10 (cons.)	26	examination
	Total: 2nd semester		144	20	20	12	66	

#### 4.2. Plan for Out-of-Class Student Self-Study of the Discipline

Semester	Section, themes	Self-Study			Assessment Tool	Self-Study educational and methodological support
		Type of Self-study	Deadlines	Load (hr.)		
8	Specifics of Risk Management in an Innovative Enterprise	Consolidation and systematization of knowledge on the topic: work with lecture notes, educational and reference literature, with internet sources.	End of the 2nd week of the semester	11	Oral questioning, testing	Lapin, N. I., & Karacharovskiy, V. V. (2025). Theory and Practice of Innovation: A Textbook for Universities (2nd ed.). Yurayt Publishing House.
8	Methods for Planning and Analyzing Innovation Risks	Consolidation and systematization of knowledge on the topic: work with lecture notes, educational and reference literature, with internet sources.	End of the 4th week of the semester	11	Oral questioning, testing	Lapin, N. I., & Karacharovskiy, V. V. (2025). Theory and Practice of Innovation: A Textbook for Universities (2nd ed.). Yurayt Publishing House.
8	Managing Key Risks of an Innovative Enterprise	Consolidation and systematization of knowledge on the topic: work with lecture notes, educational and reference literature, with internet sources.	End of the 6th week of the semester	11	Oral questioning, Report	Lapin, N. I., & Karacharovskiy, V. V. (2025). Theory and Practice of Innovation: A Textbook for Universities (2nd ed.). Yurayt Publishing House.
8	Financial Risks and Innovation Value Management	Consolidation and systematization of knowledge on the topic: work with lecture notes, educational and reference literature, with internet sources.	End of the 10th week of the semester	11	Oral questioning	Alekseeva, M. B., & Vetrenko, P. P. (2025). Analysis of Innovation Activity: A Textbook and Workshop for Universities (2nd ed., revised and expanded). Yurayt Publishing House.
8	Integrating Risk Management into Processes and the Management System	Consolidation and systematization of knowledge on the topic: work with lecture notes, educational and reference literature, with internet sources.	End of the 14th week of the semester	11	Oral questioning	Alekseeva, M. B., & Vetrenko, P. P. (2025). Analysis of Innovation Activity: A Textbook and Workshop for Universities (2nd ed., revised and expanded). Yurayt Publishing House. Goncharenko, L. P. (Ed.). (2025). Innovation Management: A Textbook for Universities (2nd ed., revised and expanded). Yurayt Publishing House.

Semester	Section, themes	Self-Study			Assessment Tool	Self-Study educational and methodological support
		Type of Self-study	Deadlines	Load (hr.)		
8	Strategic Risk Management of an Innovative Enterprise	Consolidation and systematization of knowledge on the topic: work with lecture notes, educational and reference literature, with internet sources.	End of the 18th week of the semester	11	Oral questioning, Report	Kazakova, N. A. (2025). Modern Strategic Analysis: A Textbook and Workshop for Universities (4th ed., revised and expanded). Yurayt Publishing House.
	Total:			66		
	Total self-study load (hr)			66		
	Including the amount of independent work using e-learning and distance educational technologies (hrs)			–		

### 4.3. Content of Educational Material

#### Topic 1. Specifics of Risks in an Innovative Enterprise

- 1.1. Differences Between Entrepreneurial and Innovation Risks.
- 1.2. Classification of Risks in an Innovative Enterprise.
- 1.3. Risk Structure at Different Stages of the Innovation Process. The Innovation Funnel Model.

#### Topic 2. Methods for Planning and Analyzing Innovation Risks

- 2.1. Methods for Risk Identification in Innovations.
- 2.2. Methods for Qualitative and Quantitative Assessment.
- 2.3. Tools for Strategic Risk Analysis.

#### Topic 3. Managing Key Risks of an Innovative Enterprise

- 3.1. Technological Risks.
- 3.2. Commercialization and Market Entry Risks.
- 3.3. Intellectual Property Risks.
- 3.4. Personnel and Operational Risks in an Innovation Environment.

#### Topic 4. Financial Risks and Innovation Value Management

- 4.1. Specifics of Financing Innovations.
- 4.2. Valuation and Value Management Risks, Methods.
- 4.3. Cash Flow and Investment Attraction Risks.
- 4.4. Financial Stability Indicators of an Innovative Enterprise.

#### Topic 5. Integrating Risk Management into Processes and the Management System

- 5.1. Agile Approaches to Risk Management.
- 5.2. Role Model in Risk Management.
- 5.3. Building a Risk Management System.

#### Topic 6. Strategic Risk Management of an Innovative Enterprise

- 6.1. Concepts of Resilience and Strategic Flexibility (Nassim Taleb's Concept).
- 6.2. Strategic Analysis of the External Environment.
- 6.3. Ecosystem Interaction Risks.
- 6.4. Reputational and Ethical Risks of Innovations.
- 6.5. Sustainable Development Risks and Their Impact on Company Value.

#### 4.3.1. List of Seminars, practical sessions and laboratory work

№	The me Number	Seminars, practical and laboratory work	Load (hr.)		Assessment Tools	Developed Competencies (indicators)
			Total hrs	Includi ng practic al sessions		
1	2	3	4	5	6	7
1	1	Specifics of Risks in an Innovative Enterprise 1.1. Differences Between Entrepreneurial and Innovation Risks. 1.2. Classification of Risks in an Innovative Enterprise.	2	–	Oral questioning, testing	PC-4.2

		1.3. Risk Structure at Different Stages of the				
2	2	Methods for Planning and Analyzing Innovation Risks 2.1. Methods for Risk Identification in Innovations. 2.2. Methods for Qualitative and Quantitative Assessment. 2.3. Tools for Strategic Risk Analysis.	<b>2</b>	–	Oral questioning, testing	PC -4.2
3	3	Managing Key Risks of an Innovative Enterprise 3.1. Technological Risks. 3.2. Commercialization and Market Entry Risks. 3.3. Intellectual Property Risks. 3.4. Personnel and Operational Risks in an Innovation Environment.	<b>4</b>	–	Oral questioning	PC -4.2
4	4	Financial Risks and Innovation Value Management 4.1. Specifics of Financing Innovations. 4.2. Valuation and Value Management Risks, Methods. 4.3. Cash Flow and Investment Attraction Risks. 4.4. Financial Stability Indicators of an Innovative Enterprise.	<b>4</b>	–	Oral questioning	PC -4.2
5	5	Integrating Risk Management into Processes and the Management System 5.1. Agile Approaches to Risk Management. 5.2. Role Model in Risk Management. 5.3. Building a Risk Management System.	<b>4</b>	–	Oral questioning	PC -4.2
6	6	Strategic Risk Management of an Innovative Enterprise 6.1. Concepts of Resilience and Strategic Flexibility (Nassim Taleb's Concept). 6.2. Strategic Analysis of the External Environment. 6.3. Ecosystem Interaction Risks. 6.4. Reputational and Ethical Risks of Innovations. 6.5. Sustainable Development Risks and Their Impact on Company Value.	<b>4</b>	–	Oral questioning, Report	PC -4.2
		Total hrs:	<b>20</b>			

#### 4.3.2. List of topics (questions) assigned for independent work as part of student self-study

№	Theme	Assignment	Developed Competencies (indicators)	CAI
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1	<p>Specifics of Risks in an Innovative Enterprise: Differences Between Entrepreneurial and Innovation Risks.</p> <p>· Integrating Risk Management into Processes and the Management System: Role Model in Risk Management.</p>	<p>Analysis of Internet sources, educational, and reference literature</p>	<p>PC -4.2: Capable to order the development of project programs for the creation, development, market launch and sales of innovative and IT products and control its implementation</p>	<p>CAI PC -4.2: Capable to plan and manage programs and projects</p>
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#### 4.4. Guidelines for Organizing Students' Self-Study

Objective: to determine the role and place of students' independent work in the educational process; to specify its levels, forms, and types; to generalize methods and techniques for completing specific types of academic assignments; to explain the assessment criteria.

	Academic assignments	Forms and types	Forms of control
1.	Preparation for a practical lesson	Study of the material involving working through educational literature.	Practical session
2.	Material studying	Study of the material assigned for self-study.	Test, assessment
3.	Preparation for an oral informational message	Search (selection) and review of literature and electronic information sources on an individually assigned problem.	Practical session, presentation showcase.
4.	Preparation of a written informational report.	Performance of material collection tasks	Script writing session
5.	Essay preparation, including source study and text writing	Material collection for an essay	Practical lesson
6.	Compiling a summary generalizing table on the topic	Literature review	Practical lesson
7.	Graphical representation of the studied material (creating schemes, illustrations, drawings, graphs, diagrams)	Material collection using Power Point, Canva, etc. platforms.	Practical lesson

8.	Test preparation	Study of the material assigned for self-study.	Practical lesson
9.	Completing group and individual tasks	Study of the material assigned for self-study.	Practical lesson

## V. EDUCATIONAL, METHODOLOGICAL, AND INFORMATION SUPPORT FOR THE DISCIPLINE

### a) Main literature

1. Алексеева, М. Б. Анализ инновационной деятельности : учебник и практикум для вузов / М. Б. Алексеева, П. П. Ветренко. — 2-е изд., перераб. и доп. — Москва : Издательство Юрайт, 2025. — 337 с. — (Высшее образование). — ISBN 978-5-534-14499-4. — Текст : электронный // Образовательная платформа Юрайт [сайт]. с. 1 — URL: <https://urait.ru/bcode/560646/p.1> (дата обращения: 14.01.2026).

2. Белов, П. Г. Управление рисками, системный анализ и моделирование в 3 ч. Часть 1 : учебник и практикум для вузов / П. Г. Белов. — Москва : Издательство Юрайт, 2022. — 211 с. — (Высшее образование). — ISBN 978-5-534-02606-1. — Текст : электронный // Образовательная платформа Юрайт [сайт]. — URL: <https://urait.ru/bcode/490634>

3. Белов, П. Г. Управление рисками, системный анализ и моделирование в 3 ч. Часть 2 : учебник и практикум для вузов / П. Г. Белов. — Москва : Издательство Юрайт, 2022. — 250 с. — (Высшее образование). — ISBN 978-5-534-02608-5. — Текст : электронный // Образовательная платформа Юрайт [сайт]. — URL: <https://urait.ru/bcode/490635>

4. Белов, П. Г. Управление рисками, системный анализ и моделирование в 3 ч. Часть 3 : учебник и практикум для вузов / П. Г. Белов. — Москва : Издательство Юрайт, 2022. — 272 с. — (Высшее образование). — ISBN 978-5-534-02609-2. — Текст : электронный // Образовательная платформа Юрайт [сайт]. — URL: <https://urait.ru/bcode/490636>

5. Воронцовский, А. В. Управление рисками : учебник и практикум для вузов / А. В. Воронцовский. — 2-е изд. — Москва : Издательство Юрайт, 2022. — 485 с. — (Высшее образование). — ISBN 978-5-534-12206-0. — Текст : электронный // Образовательная платформа Юрайт [сайт]. — URL: <https://urait.ru/bcode/489580>

6. Инновационный менеджмент : учебник для вузов / под общей редакцией Л. П. Гончаренко. — 2-е изд., перераб. и доп. — Москва : Издательство Юрайт, 2025. — 479 с. — (Высшее образование). — ISBN 978-5-534-17994-1. — Текст : электронный // Образовательная платформа Юрайт [сайт]. с. 48 — URL: <https://urait.ru/bcode/560294/p.48> (дата обращения: 14.01.2026).

7. Казакова, Н. А. Современный стратегический анализ : учебник и практикум для вузов / Н. А. Казакова. — 4-е изд., перераб. и доп. — Москва : Издательство Юрайт, 2025. — 453 с. — (Высшее образование). — ISBN 978-5-534-17949-1. — Текст : электронный // Образовательная платформа Юрайт [сайт]. с. 1 — URL: <https://urait.ru/bcode/560469/p.1> (дата обращения: 14.01.2026).

8. Лапин, Н. И. Теория и практика инноватики : учебник для вузов / Н. И. Лапин, В. В. Карачаровский. — 2-е изд. — Москва : Издательство Юрайт, 2025. — 350 с. — (Высшее образование). — ISBN 978-5-534-11073-9. — Текст : электронный // Образовательная платформа Юрайт [сайт]. с. 115 — URL: <https://urait.ru/bcode/565867/p.115> (дата обращения: 14.01.2026).

9. Поляков, Н. А. Управление инновационными проектами : учебник и практикум для вузов / Н. А. Поляков, О. В. Мотовилов, Н. В. Лукашов. — 2-е изд., испр. и доп. — Москва : Издательство Юрайт, 2025. — 384 с. — (Высшее образование). — ISBN 978-5-534-15534-1. — Текст : электронный // Образовательная платформа Юрайт [сайт]. с. 39 — URL: <https://urait.ru/bcode/560561/p.39> (дата обращения: 14.01.2026).

Шкурко, В. Е. Управление рисками проекта : учебное пособие для вузов / В. Е. Шкурко ; под научной редакцией А. В. Гребенкина. — 2-е изд. — Москва : Издательство Юрайт, 2022. — 182 с. — (Высшее образование). — ISBN 978-5-534-05843-7. — Текст : электронный // Образовательная платформа Юрайт [сайт]. — URL: <https://urait.ru/bcode/493673>

**The following literature is also recommended:**

1. Вяткин, В. Н. Риск-менеджмент : учебник / В.Н. Вяткин, В.А. Гамза, Ф.В. Маевский. — 2-е изд., перераб. и доп. — Москва : Издательство Юрайт, 2022. — 365 с. — URL: <https://urait.ru/bcode/489098>
2. Зиновьев, В. Е. Управление рисками : учебное пособие / В. Е. Зиновьев. — Ростов-на-Дону : РГУПС, 2019. — 67 с. — URL: <https://e.lanbook.com/book/159394>
3. Любимова, Т.А. Риск-менеджмент : учебное пособие. – Иркутск : Изд-во ИГУ, 2014. – 169 с. – URL: <https://isu.bibliotech.ru/Reader/Book/2015111011413427463600006696> Русак, О. Н. Управление риском. Введение в рискологию : учебное пособие / О. Н. Русак. — Санкт-Петербург : СПбГЛТУ, 2013. — 44 с. — URL: <https://e.lanbook.com/book/45575>
4. Никаноров, П. А. Управление рисками в менеджменте качества: учебник.— СПб.: Изд-во Университета при МПА ЕврАзЭС, 2019. — 188 с.

**A series of author's video lectures and practical video classes on the youtube.com platform**

1. <http://youtu.be/vZLWZgA1aNE> Введение в линейное программирование.
2. <http://youtu.be/MF6W0rMp30o> Элементы теории игр. Лекция 1.
3. <http://youtu.be/Dq-7QIiLI6U> Элементы теории игр. Лекция 2.
4. <http://youtu.be/p9K3Rq31Zms> Модели динамического программирования.
5. <http://youtu.be/5RiME6fk3UM> Сетевая оптимизация.

**b) databases, search and reference systems, and information systems**

1. ЭБС ЭЧЗ «Библиотех». Государственный контракт № 019 от 22.02.2011 г. ООО «Библиотех». Лицензионное соглашение № 31 от 22.02.2011 г. Адрес доступа: <https://isu.bibliotech.ru/> Срок действия: с 22.11.2011 г. бессрочный.
2. ЭБС «Рукопт» Контракт № 98 от 13.11.2020 г.; Акт № БК-5415 от 14.11.20 г. Срок действия по 13.11.2021г. доступ: <http://rucont.ru/>
3. ЭБС «Издательство Лань». ООО «Издательство Лань». Информационное письмо № 128 от 09.10.2017 г. Срок действия: бессрочный. Адрес доступа: <http://e.lanbook.com/>
4. ЭБС «Национальный цифровой ресурс «Рукопт». ЦКБ «Бибком». Контракт № 04-Е-0343 от 12.11.2021 г. Адрес доступа: <http://rucont.ru/>
5. ЭБС «Айбукс.ру/ibooks.ru». ООО «Айбукс». Контракт № 04-Е-0344 от 12.11.2021 г.; Акт от 14.11.2021 г. Адрес доступа: <http://ibooks.ru>
6. Электронно-библиотечная система «ЭБС Юрайт». ООО «Электронное издательство Юрайт». Контракт № 04-Е-0258 от 20.09.2021г. Адрес доступа: <https://urait.ru/>

**VI. MATERIAL AND TECHNICAL SUPPORT FOR THE DISCIPLINE**

**6.1. Educational and Laboratory Equipment**

Наименование специальных помещений и помещений для самостоятельной работы	Оснащенность специальных помещений и помещений для самостоятельной работы	Перечень лицензионного программного обеспечения. Реквизиты подтверждающего документа
Учебная аудитория для проведения	Аудитория оборудована специализированной (учебной) мебелью на 48 студентов и техническими средствами обучения, служащими для	БАЗОВЫЙ УСТАНОВОЧНЫЙ КОМПЛЕКТ ПО: Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – договор с ЗАО

занятий лекционного типа	<p>представления учебной информации большой аудитории Комплект демонстрационного оборудования включает:</p> <ol style="list-style-type: none"> <li>1.ПК HP Elite 8300 SFF i5 3470/4Gb/1Tb/DVDRV/kb/m/DOS/Solenoid Lock and Hood Sensor (RUS)</li> <li>2. Монитор Viewsonic TFT 20" VA2014WM glossy-black 5ms 20 00:1 250cd M/M</li> <li>3. Проектор Epson EB-1830</li> <li>4. Колонки активные Genius SP-S110 черные</li> <li>5. Разветвитель видеосигнала Aten VS92A 2- port VGA</li> </ol> <p>Оснащена учебно-наглядными пособиями и электронными презентациями, обеспечивающими тематические иллюстрации по всем темам, указанным в рабочей программе дисциплины</p>	<p>"СофтЛайн Трейд" Tr026664 от 17.05.2007 Project Standard 2007, Access 2007 - Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. – договор с ЗАО "СофтЛайн Трейд" Tr000023480 от 19.05.2015</p> <p>Операционные системы Windows по лицензионным программам предустановки OEM, Программы академического сотрудничества с Microsoft MSDN AA.- договор с ЗАО "СофтЛайн Трейд" Tr017431 от 15.05.2008</p> <p>Операционные системы Windows по лицензионным программам предустановки OEM, Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. – договор с ЗАО "СофтЛайн Трейд" Tr000031723 от 05.08.2015</p> <p>Антивирусные программы - Права на программы для ЭВМ drWeb Server Security комплексная защита 120Пк (1 лицензию за год) миграция с дозакупкой(LBW-BC-12M-120:119-C4) – договор с ЗАО "СофтЛайн Трейд" 13982/МОС2957 от 22.01.2016</p> <p>Архиваторы WinRAR: 3.x: Standard Licence - для юридических лиц 100-199 лицензий – договор с ЗАО "СофтЛайн Трейд" №15422/IRK11 от 05.02.2010</p> <p>Сетевая клиентская часть Права на программы для ЭВМ Windows Server CAL 2012 Russian OLP NL Akademic Edition Device CAL 120 лицензий – договор с ЗАО "СофтЛайн Трейд" 13512/МОС2957 от 29.10.2015</p> <p>Межсетевой экран, функционал Proxu - Право использования программ для ЭВМ Traffic Inspector GOLD льготная – договор с ЗАО "СофтЛайн Трейд" Tr044356 от 27.08.2013</p> <p>Право использования программ для ЭВМ Продление Traffic Inspector GOLD Special на 1 год – договор с ЗАО "СофтЛайн Трейд" Tr000112196 от 29.09.2016</p>
Учебная аудитория для проведения занятий семинарского типа	<p>Аудитория оборудована специализированной (учебной) мебелью на 48 студентов и техническими средствами обучения, служащими для представления учебной информации большой аудитории</p> <p>Комплект демонстрационного оборудования включает: 1.ПК HP Elite 8300 SFF i5</p>	<p>БАЗОВЫЙ УСТАНОВОЧНЫЙ КОМПЛЕКТ ПО:</p> <p>Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – договор с ЗАО "СофтЛайн Трейд" Tr026664 от 17.05.2007 Project Standard 2007, Access 2007 - Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. –</p>

	<p>3470/4Gb/1Tb/DVDRV/kb/m/DOS/Solenoid Lock and Hood Sensor (RUS)  2. Монитор Viewsonic TFT 20" VA2014WM glossy-black 5ms 20 00:1 250cd M/M  3. Проектор Epson EB-1830  4. Колонки активные Genius SP-S110 черные  5. Разветвитель видеосигнала Aten VS92A 2- port VGA</p>	<p>договор с ЗАО "СофтЛайн Трейд" Tr000023480 от 19.05.2015  Операционные системы Windows по лицензионным программам предустановки OEM, Программы академического сотрудничества с Microsoft MSDN AA.- договор с ЗАО "СофтЛайн Трейд" Tr017431 от 15.05.2008  Операционные системы Windows по лицензионным программам предустановки OEM, Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. – договор с ЗАО "СофтЛайн Трейд" Tr000031723 от 05.08.2015  Антивирусные программы - Права на программы для ЭВМ drWeb Server Security комплексная защита 120Пк (1 лицензию за год) миграция с дозакупкой(LBW-BC-12M-120:119-C4) – договор с ЗАО "СофтЛайн Трейд" 13982/МОС2957 от 22.01.2016  Архиваторы WinRAR: 3.x: Standard Licence - для юридических лиц 100-199 лицензий – договор с ЗАО "СофтЛайн Трейд" №15422/IRK11 от 05.02.2010  Сетевая клиентская часть Права на программы для ЭВМ Windows Server CAL 2012 Russian OLP NL Academic Edition Device CAL 120 лицензий – договор с ЗАО "СофтЛайн Трейд" 13512/МОС2957 от 29.10.2015  Межсетевой экран, функционал Проху - Право использования программ для ЭВМ Traffic Inspector GOLD льготная – договор с ЗАО "СофтЛайн Трейд" Tr044356 от 27.08.2013  Право использования программ для ЭВМ Продление Traffic Inspector GOLD Special на 1 год – договор с ЗАО "СофтЛайн Трейд" Tr000112196 от 29.09.2016</p>
<p>Аудитория для групповых и индивидуальных консультаций, текущего контроля и промежуточной аттестации</p>	<p>Аудитория оборудована специализированной (учебной) мебелью на 11 студентов, 5 рабочих мест, оснащенных компьютерами с подключением к сети «Интернет» и обеспечением доступа в ЭИОС ФГБОУ ВО «ИГУ». 1. 5 рабочих мест Системный блок HP compad dc7800SFF Dual Core PE-2180, 4 Gb DDR2 PC6400, 160GB SATA 3.0 HDD  2. Монитор ЖК (LCD) дисплей 17,0" ViewSonic "VA703m" 1280x1024, 8мс, TCO"03, серебр-черный (D-Sub, ММ)  3. Принтер Многофункциональное</p>	<p>БАЗОВЫЙ УСТАНОВОЧНЫЙ КОМПЛЕКТ ПО:  Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – договор с ЗАО "СофтЛайн Трейд" Tr026664 от 17.05.2007  Project Standard 2007, Access 2007 - Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. – договор с ЗАО "СофтЛайн Трейд" Tr000023480 от 19.05.2015  Операционные системы Windows по лицензионным программам предустановки OEM, Программы академического</p>

	<p>устройство Hewlett-Packard LaserJet 3055 All-in-One одна штука.</p>	<p>сотрудничества с Microsoft MSDN АА.- договор с ЗАО "СофтЛайн Трейд" Tr017431 от 15.05.2008</p> <p>Операционные системы Windows по лицензионным программам предустановки OEM, Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. – договор с ЗАО "СофтЛайн Трейд" Tr000031723 от 05.08.2015</p> <p>Антивирусные программы - Права на программы для ЭВМ drWeb Server Security комплексная защита 120Пк (1 лицензию за год) миграция с дозакупкой(LBW-BC-12M-120:119-C4) – договор с ЗАО "СофтЛайн Трейд" 13982/МОС2957 от 22.01.2016</p> <p>Архиваторы WinRAR: 3.x: Standard Licence - для юридических лиц 100-199 лицензий – договор с ЗАО "СофтЛайн Трейд" №15422/IRK11 от 05.02.2010</p> <p>Сетевая клиентская часть Права на программы для ЭВМ Windows Server CAL 2012 Russian OLP NL Akademic Edition Device CAL 120 лицензий – договор с ЗАО "СофтЛайн Трейд" 13512/МОС2957 от 29.10.2015</p> <p>Межсетевой экран, функционал Proху - Право использования программ для ЭВМ Traffic Inspector GOLD льготная – договор с ЗАО "СофтЛайн Трейд" Tr044356 от 27.08.2013</p> <p>Право использования программ для ЭВМ Продление Traffic Inspector GOLD Special на 1 год – договор с ЗАО "СофтЛайн Трейд" Tr000112196 от 29.09.2016</p>
<p>Помещение для самостоятельной работы студентов</p>	<p>Оборудовано специализированной (учебной) мебелью на 10 студентов, оснащено компьютерной техникой, подключенной к сети Интернет и обеспеченной доступом в ЭИОС ИГУ</p> <p>1. Системный блок Think Centre M80 Series SFF в комплекте: Intel® Core™ i3-540 Clarkdale 2.93GHz / 1333MHz / Dual Core™ / 4M/73W / LGA 1156/32nm/4GB PC3-10600 SDRAM x 2 /250 GB, 7200RPM SATA</p>	<p><b>БАЗОВЫЙ УСТАНОВОЧНЫЙ КОМПЛЕКТ ПО:</b></p> <p>Office 2007 Russian OpenLicensePack NoLevel AcademicEdition – договор с ЗАО "СофтЛайн Трейд" Tr026664 от 17.05.2007</p> <p>Project Standard 2007, Access 2007 - Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. – договор с ЗАО "СофтЛайн Трейд" Tr000023480 от 19.05.2015</p> <p>Операционные системы Windows по лицензионным программам предустановки OEM, Программы академического сотрудничества с Microsoft MSDN АА.- договор с ЗАО "СофтЛайн Трейд" Tr017431 от 15.05.2008</p> <p>Операционные системы Windows по лицензионным программам предустановки</p>

		<p>ОЕМ, Программы академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery. – договор с ЗАО "СофтЛайн Трейд" Tr000031723 от 05.08.2015</p> <p>Антивирусные программы - Права на программы для ЭВМ drWeb Server Security комплексная защита 120Пк (1 лицензию за год)</p>
	<p>/DVD RW - 10шт  2. Монитор ЖК (LCD) - монитор 20.0 ViewSonic "VA2013w" 1600x900, 5мс, TCO 03, черный (D-Sub) - 10шт  3. Принтер HP LaserJet 5000N, A3, 22ppm, 32 MB, 250&amp;500 sheet feeder, JetDirect 615n prn svr  4. Принтер HP LaserJet 5100th, A3, 22ppm, 32 MB, 250&amp;500 sheet feeder, JetDirect 615n prn svr</p>	<p>миграция с дозакупкой(LBW-BC-12M-120:119-C4) – договор с ЗАО "СофтЛайн Трейд" 13982/МОС2957 от 22.01.2016</p> <p>Архиваторы WinRAR: 3.x: Standard Licence - для юридических лиц 100-199 лицензий – договор с ЗАО "СофтЛайн Трейд" №15422/IRK11 от 05.02.2010</p> <p>Сетевая клиентская часть Права на программы для ЭВМ Windows Server CAL 2012 Russian OLP NL Akademic Edition Device CAL 120 лицензий – договор с ЗАО "СофтЛайн Трейд" 13512/МОС2957 от 29.10.2015</p> <p>Межсетевой экран, функционал Проху - Право использования программ для ЭВМ Traffic Inspector GOLD льготная – договор с ЗАО "СофтЛайн Трейд" Tr044356 от 27.08.2013</p> <p>Право использования программ для ЭВМ Продление Traffic Inspector GOLD Special на 1 год – договор с ЗАО "СофтЛайн Трейд" Tr000112196 от 29.09.2016</p>

## 6.2. Software:

Университет обеспечен необходимым комплектом лицензионного и свободно распространяемого программного обеспечения, в том числе отечественного производства:

1. Базовый установочный комплект по: Office 2010 Услуги по предоставлению права использования программы Microsoft Desktop Edu ALNG LicSAPk OLV E 1Y Acdmc Ent., 39-лицензий для БМБШ ИГУ. Договор № 03-К-1131 от 29.11.2021 КОСГУ 226.4
2. Project Standard 2007, Access 2007 – Подписка ИГУ Azure Dev Tools for Teaching subscription (Visio, Projekt) 1 Year. Microsoft Corporation, One Microsoft Way, Redmond, WA 98052. Expiration Date March 31, 2023.
3. Microsoft Project Professional 2010, Подписка ИГУ Azure Dev Tools for Teaching subscription (Visio, Projekt) 1 Year. Microsoft Corporation, One Microsoft Way, Redmond, WA 98052. Expiration Date March 31, 2023.
4. Операционные системы Windows'7, Windows'10 Услуги по предоставлению права использования программы Microsoft Desktop Edu ALNG LicSAPk OLV E 1Y Acdmc Ent., 39-лицензий для БМБШ ИГУ. Договор № 03-К-1131 от 29.11.2021 КОСГУ 226.4
5. Антивирусные программы - Dr.Web продление Договор № Tr000582689/03-Е-0043 от 05 февраля 2021 г. счет № Tr000582689 от 08 февраля 2021
6. Архиваторы WinRAR: 3.x: Standard Licence - для юридических лиц 100-199 лицензий – прилож. №1 к дог №15422/IRK11 ЗАО "СофтЛайн Трейд" от 05.02.2010

7. Сетевая клиентская часть Права на программы для ЭВМ Windows Server CAL 2012 Russian OLP NL Akademic Edition Device CAL 120 лицензий - счет Tr000051059 ЗАО "СофтЛайн Трейд" от 27.10.2015
8. Межсетевой экран, функционал Проху - Право использования программ для ЭВМ Traffic Inspector GOLD льготная счет Tr005456 ЗАО "СофтЛайн Трейд" от 27.08.2013
9. Traffic Inspector GOLD Special\* на 5 лет Договор PC3-0000276 от 16.11.2021 КОСГУ 226.4 Продление лицензии

### **6.3. Technical and Electronic Learning Tools:**

Мультимедийные средства и другая техника для презентаций учебного материала:

1. Настольный ПК HP ElliteDesk 800 G4 SFF Intel Core i5 8500 (3Ghz)/8192Mb/1000Gb/DVDrw/war 3y/W10Pro +V
  2. Монитор ViewSonic 21,5" VA2245a - LED [LED, 1920x1080, 10M: 1 5мс, 170гор, 160вер, D-Sub]
  3. Проектор Nec M420X LCD 4200ANSI Lm XGA 2000:1 лампа 3500ч. Eco mode HDMI USB Viewer RJ-45 10W 3,6 кг
  4. Колонки Jetbalance JB-115U 2.0 черные (4W)
  5. Разветвитель видеосигнала Aten VS92A 2- port VGA
- Перечень используемого лицензионного программного обеспечения:
1. Office 2010 по программе академического сотрудничества с Russian Microsoft Desktop Education AllLng License/Software Assurance Pack Academic OLV 1License LevelE Enterprise
  2. Project Standard 2007, Access 2007 – по программе академического сотрудничества с Microsoft DreamSpark Premium Electronic Software Delivery.
  3. Microsoft Project Professional 2010, Microsoft Visio Professional 2010 по программе академического сотрудничества с Microsoft Imagine Standart Electronic Software Delivery при содействии ЦНИТ ИГУ.

## **VII. EDUCATION TECHNOLOGIES**

In accordance with the requirements of the Federal State Educational Standard (FSES) for the field of study, the implementation of the competency-based approach involves the extensive use of active and interactive forms of conducting classes (computer simulations, business and role-playing games, case studies) in the educational process, combined with extracurricular work, to form and develop students' professional skills. The curriculum includes meetings with representatives of Russian companies, state and public organizations, as well as master classes by experts and specialists.

The teaching of the discipline involves the use of the following educational technologies:

- Conducting classroom sessions using multimedia technologies, audio and video materials;
- Conducting lectures in the form of problem-based lectures, lecture-discussions (if necessary – in the form of webinars with recording for subsequent viewing);
- Using a problem-oriented approach through independent work assignments;
- Test technologies on the "Gekadem" distance learning platform of the Baikal International Business School;
- Applying interactive learning technologies, such as group discussions, work in small groups;
- Conducting master classes with specialists;
- Students completing tests and independent work assignments.

The proportion of classes conducted in interactive forms – practical classes – is determined by the main goal (mission) of the program, the characteristics of the student body, and the content of specific disciplines (determined by FSES requirements, taking into account the specifics of the main professional educational program). The proportion of lecture-type classes for relevant student groups is determined by the corresponding working curriculum in accordance with FSES requirements.

Distance technologies used in the implementation of various types of academic work:

- Individual communication with students via the instructor's email;
- Use of the ISU educational portal <https://educa.isu.ru/> and the platform of the Baikal International Business School "Gekadem" to organize current monitoring of academic progress and attendance.

## VIII. MATERIALS FOR FORMATIVE AND SUMMATIVE ASSESSMENT

The assessment fund for the discipline "Business Risk Management" is a set of assessment materials for conducting current control, including intermediate student assessment, and is presented as a section of the program.

### 8.1. Assessment Tools Used for Summative Assessment

Entrance testing in the discipline is not conducted, as formed knowledge in the discipline "Entrepreneurial Risk Management" is sufficient for mastering the discipline.

### 8.2. Assessment materials (tools) that provide diagnostics of the formation of discipline competency indicators

№	Formats of Assessment Tools	Assessed themes (sections)	Assessed competencies/ indicators
1	2	3	4
1	Oral questioning	Topics 1-6	PC -4.2
2	Report	Topics 3, 6	PC -4.2
3	Test	Topics 1, 2	PC -4.2

### 8.3. Types of assessment tools used for current control and intermediate certification

The list of assessment tools used to evaluate competencies at various stages of their formation, as well as a brief description of these tools, is provided in the table

№	Assessment tool	Brief description of these tools	Presentation of the evaluation tool
1	Oral questioning	A tool for monitoring independent work or the assimilation of practical session results, organized as a specialized conversation between the instructor and a student on topics related to the discipline, designed to ascertain the extent of the student's knowledge on a specific section, topic, question, etc. May be used for assessing students' abilities, skills, and/or practical experience.	Questions for oral questioning on the topics (sections) of the discipline

3	Report	A product of a student's independent work, which is a public presentation or written report presenting the results of research on a specific educational-practical, educational-research, or scientific problem. May be used for assessing students' knowledge, abilities, skills, and/or practical experience.	Topics for reports
4	Test	A system of standardized tasks allowing for the automation of the procedure for measuring a student's level of knowledge and abilities. Completed by the student in the "Gekadem" LMS. The test contains 25 questions, drawn from a bank of 100 questions, with a completion time of 45 minutes and 1 attempt allowed. May be used for assessing students' knowledge and abilities.	List of test tasks
5	Interm assessment	A tool allowing for the assessment of a student's knowledge, abilities, skills, and/or practical experience in the discipline. Conducted orally in the form of an interview based on topics from section 8.6, or in the form of a test in the Gekadem LMS. Preparation time is 45 minutes. May be used for assessing students' knowledge, abilities, skills, and/or practical experience.	List of theoretical questions and practical credit tasks

#### 8.4. Criteria for Assessing Competency Formation during Intermediate Certification and Current Control

Oral questioning:

Grading Scale	Description of the Result (Answer)	Competency Level
86 – 100 points	The student's answer reflects the main concepts and theories on the topic, includes their critical analysis and comparison, and the described theoretical propositions are illustrated with practical examples and empirical data. The student formulates and substantiates their own point of view on the stated problems. The material is presented using professional language and the appropriate system of concepts and terms.	High
71 – 85 points	The student's answer describes and compares the main modern concepts and theories on the topic. The described theoretical propositions are illustrated with practical examples. The student formulates their own point of view on the stated problems but experiences some difficulty in arguing it. The material is presented using professional language and the appropriate system of concepts and terms.	Baseline
61 – 70 points	The student's answer reflects only some modern concepts and theories on the topic; analysis and comparison of these theories are not conducted. The student experiences significant difficulty in illustrating theoretical propositions with practical examples. The student lacks their own point of view on the stated problems. The material is presented using professional language and the appropriate system of concepts and terms.	Minimal
0 – 60 points	The student's answer does not reflect modern concepts and theories on the topic. The student cannot provide practical	Competencies not formed

	examples. The material is presented inconsistently and illogically; concepts and terms from the relevant scientific field are not used. The answer reflects the student's system of non-professional views on the stated problem; the student cannot name a single scientific theory or define basic concepts.	
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Report:

Grading Scale	Description of the Result (Answer)	Competency Level
86 – 100 points	The problem related to the report (presentation) topic is identified and its relevance is justified. A concise analysis of various viewpoints on the issue is provided, and the student's own position is logically presented. Conclusions are formulated, and the topic is fully covered.	High
71 – 85 points	The problem related to the report (presentation) topic is identified and its relevance is justified. The analysis of various viewpoints on the issue does not reflect all scientifically substantiated positions. The student's own position or the formulated conclusions are not entirely logical. The topic is covered sufficiently.	Baseline
61 – 70 points	The problem related to the report (presentation) topic is identified, but its relevance is not justified. Analysis of various viewpoints on the issue is absent. There is a lack of logic and a defined personal position in formulating conclusions. The topic is partially covered.	Minimal
0 – 60 points	The subject matter of the report (presentation) topic is not revealed. Existing viewpoints on the given problem are not presented. There is no personal point of view. Conclusions are not formulated.	Competencies not formed

Test:

Grading Scale	Description of the Result (Answer)	Competency Level
86 – 100 points	The proportion of correct answers accounts for 86-100% of the total questions in the test	High
71 – 85 points	The proportion of correct answers accounts for 70-85% of the total questions in the test	Baseline
61 – 70 points	The proportion of correct answers accounts for 61-70% of the total questions in the test	Minimal
0 – 60 points	The proportion of correct answers accounts for 0-60% of the total questions in the test	Competencies have not been formed

Interm assessment:

Grading Scales		Grading Criterion	Competency Level
86 – 100 points	Pass	The student answered the theoretical questions correctly. Demonstrated excellent knowledge within the scope of the course material. Correctly completed the practical assignments. Demonstrated excellent abilities and mastery of skills in applying the acquired knowledge and abilities to solve problems within the scope of the course material. Answered all supplementary questions.	High
	Excellent		
71 – 85 points	Good	The student answered the theoretical questions with minor inaccuracies. Demonstrated good knowledge	Baseline

		within the scope of the course material. Completed the practical assignments with minor inaccuracies. Demonstrated good abilities and mastery of skills in applying the acquired knowledge and abilities to solve problems within the scope of the course material. Answered most supplementary questions.	
61 – 70 points	Satisfactory	The student answered the theoretical questions with significant inaccuracies. Demonstrated satisfactory knowledge within the scope of the course material. Completed the practical assignments with significant inaccuracies. Demonstrated satisfactory abilities and mastery of skills in applying the acquired knowledge and abilities to solve problems within the scope of the course material. Made many inaccuracies when answering supplementary questions.	Minimal
0 – 60 points	Fail	The student demonstrated an insufficient level of knowledge and abilities when answering theoretical questions and completing practical assignments for solving problems within the scope of the course material. Many incorrect answers were given to supplementary questions.	Competencies not formed

### 8.5. Description of the procedures for conducting intermediate certification and evaluating learning outcomes

When conducting intermediate certification in the form of a graded pass/fail test, the teacher may use the results of current progress control during the semester. Assessment tools and typical control assignments, test tasks used in current control allow assessing the knowledge, skills and abilities/experience of students in mastering the discipline. In order to use the results of current progress control, the teacher calculates the average score of the level of formation of the student's competencies (sum of scores received by the student divided by the number of scores). Testing on the material studied during the semester consists of 25 questions, the time to complete the test is 45 minutes, the number of attempts is one. Examples of questions for testing are given in clause 8.6.

Intermediate certification in the form of a graded pass/fail test can be conducted by oral interview using tickets. The ticket contains one theoretical question to assess knowledge and one practical task to assess skills, abilities and/or experience. Questions and tasks are selected from the list of typical theoretical questions and practical tasks for the test (clause 8.7). The distribution of theoretical questions and practical tasks among examination tickets is in a closed access for students.

During the test, the student takes a ticket; the student is given time to prepare an answer, within 45 minutes. During the student's answer to the questions and tasks of the ticket, the teacher may ask additional questions.

Each question/task of the ticket is assessed on a hundred-point scale, and then the arithmetic mean of the scores received for each question/task is calculated. The arithmetic mean of the scores is rounded to an integer according to the rules of arithmetic rounding.

### 8.6. Demonstration versions of current monitoring assessment tools

№	Name of the assessment tool	Example of the assessment tool
1	Oral examination questions on the topics	1. What is the fundamental difference between uncertainty in innovation activities and uncertainty in traditional business?

<p>(sections) of the discipline</p>	<ol style="list-style-type: none"> <li>2. Explain why classical risk management methods may prove insufficient for managing innovative projects.</li> <li>3. What is the "innovation funnel" and how does the risk structure change at each of its stages?</li> <li>4. Name the key sources of internal risks in an innovative enterprise.</li> <li>5. Name the key sources of external risks most critical for innovations.</li> <li>6. Explain the concept of "parametric uncertainty" as it applies to technological risks.</li> <li>7. What is the difference between the risk of project failure and the risk of missed opportunity in innovation activity?</li> <li>8. What role does the speed of industry changes play as a factor that amplifies innovation risks?</li> <li>9. Define the "risk of technology obsolescence" even before a product's market launch.</li> <li>10. What is the "systemic risk" of an innovation, related to dependence on the development of complementary technologies or infrastructure?</li> <li>11. Why is it critically important for innovative enterprises to classify risks not only by type but also by product lifecycle phases?</li> <li>12. What is meant by "coordination risks"?</li> <li>13. How does market uncertainty differ from technological uncertainty from a risk management perspective?</li> <li>14. Explain why, for an early-stage project, the risk related to the team is often considered more significant than financial risk.</li> <li>15. What is the "risk of incorrect problem definition" at the start of an innovation project?</li> <li>16. How does the length of the planning horizon affect the process of identifying and assessing the strategic risks of an innovative company?</li> <li>17. Why do traditional SWOT and PESTLE analyses for innovative projects require a special, more dynamic approach?</li> <li>18. What is "scenario analysis" and how can it be applied to work with the high uncertainty of future markets or technologies?</li> <li>19. What is the specific application of the "Fault Tree Analysis" method for analyzing the causes of failure in complex technological systems?</li> <li>20. What is "data-driven quantitative risk assessment" and what specific complexities arise when applying it to fundamentally new products?</li> </ol>
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	<p>21. What are the methods for qualitative assessment of innovation risks?</p> <p>22. How can the "Monte Carlo" method be used to model the financial outcomes of an innovation project, taking into account multiple risk factors?</p> <p>23. What is "Real Options Valuation" and how does it help manage risks associated with phased financing and development of innovations?</p> <p>24. How to build and interpret a "Risk Matrix" for an innovation project?</p> <p>25. What is a "Risk Map" and how to use it?</p> <p>26. What is "Sensitivity Analysis" of the key variables of an innovation project?</p> <p>27. How to use the "Breakeven Analysis" method for assessing commercialization risks?</p> <p>28. What is the "Delphi method" and in what cases is it appropriate to use it for expert assessment of breakthrough technology risks?</p> <p>29. How are machine learning methods and big data analytics used for risk analytics in innovative industries?</p> <p>30. What is the "parallel development" strategy and how does it help reduce technological risks?</p> <p>31. What methods are used to reduce commercialization risks?</p> <p>32. What risks arise at the stage of "transition from laboratory to production" and how to manage them?</p> <p>33. Describe risk management strategies related to dependence on a unique supplier of a critical component or raw material.</p> <p>34. What is the "risk of non-compliance of the product with regulatory requirements" and how to mitigate it?</p> <p>35. Describe various intellectual property protection strategies from a risk management perspective.</p> <p>36. What are the specific personnel risks in an innovative company and methods for dealing with them?</p> <p>37. What is the "risk of an incorrect organizational structure"?</p> <p>38. How to manage operational risks associated with the implementation of new business processes?</p> <p>39. Describe the risks related to data quality and its use for decision-making in an innovative enterprise.</p>
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	<p>40. What is the "supply chain risk" for an innovative product produced in limited series or as custom orders?</p> <p>41. What are the cybersecurity risks for a company whose primary value is concentrated in digital assets and algorithms?</p> <p>42. How to manage reputational risks in case of a pilot project failure or the release of a product with shortcomings?</p> <p>43. Describe the risk of "underfunding" at a critical development stage and its possible consequences.</p> <p>44. What is the "risk of a funding gap"?</p> <p>45. What key risk variables should be incorporated into the financial model of an innovation project?</p> <p>46. What short-term financing instruments can companies use to manage cash flow gaps, and what are the risks of their use?</p> <p>47. What is the risk of a "suboptimal capital structure" for a growing innovative company?</p> <p>48. How to account for the risks of currency exchange rate volatility in financial planning?</p> <p>49. What tax risks arise for companies benefiting from incentives for innovation activities?</p> <p>50. What is the risk of "impairment of intangible assets" and how is it reflected in financial statements?</p> <p>51. How to calculate the "cost of capital" for a high-risk innovation project?</p> <p>52. Describe the methodology for calculating the "Breakeven Point" for a product requiring significant initial R&amp;D investment.</p> <p>53. What financial indicators are most important to monitor at the growth stage of an innovative company?</p> <p>54. How do Agile principles (iterativeness, adaptability) change the traditional approach to project risk management?</p> <p>55. How to integrate the risk management process into the closed-loop product development cycle (from idea to market launch)?</p> <p>56. Describe the principle of delegating authority for risk-related decisions to different levels in an innovative company.</p> <p>57. What specific risks arise when outsourcing part of R&amp;D or working with external contractors?</p>
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		<p>58. How to ensure that risk management is perceived by the team as a value-creation tool, not a bureaucratic procedure?</p> <p>59. Explain Nassim Taleb's concept of "antifragility".</p> <p>60. What is "strategic flexibility" and what decisions in the business model ensure it?</p> <p>61. How does conducting regular PESTLE analysis help identify emerging strategic risks for an innovative business?</p> <p>62. Describe the "Blind Spot Analysis" method in the strategic planning of an innovative company.</p> <p>63. Describe the specific reputational risks of innovative companies related to the ethics of technologies (e.g., AI, biotech).</p> <p>64. What are "ethical risks of innovations" and how can a company integrate their assessment into the product development process?</p> <p>65. How do ESG (Environmental, Social, Governance) risks affect the attractiveness of an innovative company for long-term investors?</p> <p>66. What constitutes the risk of "strategic mispositioning"?</p> <p>67. How is the principle of diversifying a portfolio of innovation projects related to the strategic resilience of a company?</p> <p>68. How should the strategic risk management process influence the formation and updating of the mission and long-term goals of an Innovative company?</p>
2	Report topics	<p>Risk Classification in an Innovative Enterprise at Different Stages of the Project Lifecycle</p> <p>The Innovation Funnel Model as a Tool for Risk-Oriented Resource Planning</p> <p>Quantitative Risk Assessment for a Product with Zero Sales History: Opportunities and Limitations of Methods.</p> <p>Commercialization Risks for a Scientific Development</p> <p>Building an Intellectual Property Protection System in an IT Company</p> <p>Cyber Risks for an Innovative Company</p> <p>Risks and Opportunities of Different Financing Instruments</p> <p>The Antifragility Concept (Nassim Taleb) for a Technology Company: How to Create an Organization That Becomes Stronger from Shocks</p> <p>Diversification of an Innovation Project Portfolio as a Method of Strategic Risk Management</p>

		<p>Managing Ecosystem Risks: New Horizons for Innovative Companies</p> <p>From Analysis to Management: A Systemic Approach to Innovation Risks</p> <p>How to Turn Uncertainty into an Advantage: From Risk Management to Creating Antifragility</p> <p>Managing Technological Risks at the Early Project Stage</p> <p>Financial Sustainability of an Innovative Enterprise: Which Indicators Are Important for Investors and Management</p> <p>Personnel Risks in an Innovative Company and Methods for Their Minimization</p>
3	Example of test tasks	<p>1. What fundamentally distinguishes entrepreneurial risks from innovation risks?</p> <p>a) Innovation risks are always related to technology.  b) Innovation risks are associated with fundamentally new activities, high uncertainty, and the probability of a "zero" result.  c) Entrepreneurial risks have a higher financial component.  d) They do not differ; they are synonyms.</p> <p>2. Which type of risk is NOT typical for an innovative enterprise?</p> <p>a) Risk of technology not meeting market requirements.  b) Risk of technology obsolescence during development.  c) Risk of a decrease in raw material prices due to long-term contracts (more of an opportunity).  d) Risk of losing key specialists.</p> <p>3. The "innovation funnel" model illustrates:</p> <p>a) The investment attraction process.  b) The gradual filtering of projects and concentration of resources at each stage of the innovation lifecycle, enabling risk management.  c) The marketing strategy for launching a new product.  d) The stages of patent development.</p> <p>4. Which method is most effective for the primary identification of risks in an innovation project?</p> <p>a) Analysis of financial statements.  b) SWOT analysis.  c) Brainstorming (or the Delphi method) involving experts from different areas (R&amp;D, marketing, finance).  d) Benchmarking.</p> <p>5. For quantitative risk assessment of a new product with "zero sales history," which method is NOT suitable?</p> <p>a) Simulation modeling (Monte Carlo).  b) Sensitivity analysis.  c) Time series analysis based on the product's historical data.  d) Using analogs and benchmark industry indicators.</p> <p>6. Which risk assessment method allows building a "tree" of causes and consequences of an undesirable event?</p> <p>a) SWOT analysis.  b) Failure Mode and Effects Analysis (FMEA) or Ishikawa diagram.</p>

	<p>c) Benchmarking. d) Cash flow analysis.</p> <p>7. Which of the following is NOT a technological risk? a) Inability to achieve planned technical parameters. b) Errors in product pricing. c) The emergence of a more advanced technology from a competitor. d) Insufficient qualifications of engineering staff.</p> <p>8. The main risk in commercializing a scientific development lies in: a) The difficulty of obtaining a patent. b) The "gap" between the development's technical characteristics and the market's real needs. c) A shortage of laboratory equipment. d) The complexity of scientific publications.</p> <p>9. Which measure is NOT effective for protecting intellectual property in an IT company? a) Patenting algorithms or utility models. b) Registering copyrights for code. c) Publishing all source code in open access. d) Using NDAs (Non-Disclosure Agreements) with employees.</p> <p>10. The key personnel risk in an innovative company is: a) High level of remuneration. b) "Brain drain" – the departure of key know-how holders to competitors or to start their own startup. c) The need for constant employee training. d) The presence of a trade union organization.</p> <p>11. Which form of financing carries the least financial risk for the innovative enterprise itself? a) A bank loan. b) A scientific research grant. c) Venture capital investment.</p> <p>12. Which financial sustainability indicator is LEAST relevant for an early-stage startup? a) Runway (cash sufficiency). b) Current ratio. c) Return on Investment (ROI) over the planning horizon. d) Debt-to-equity ratio.</p> <p>13. What is the main difference between the Agile approach to risk management and the classical one? a) Complete abandonment of risk planning. b) Continuous, iterative identification and response to risks within short sprints. c) Focus only on financial risks. d) Transferring all risks to an external contractor.</p> <p>14. The first step in building a risk management system in a company is: a) Purchasing specialized software. b) Appointing a risk manager. c) Identifying and compiling a register of risks significant to business objectives. d) Developing a risk management policy.</p>
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	<p>15. According to Nassim Taleb's concept, "antifragility" is:</p> <ol style="list-style-type: none"> <li>a) The absence of any risks.</li> <li>b) The ability to withstand shocks without changes (resilience).</li> <li>c) The ability to benefit from shocks, uncertainty, and stress, becoming stronger.</li> <li>d) A strategy of avoiding any shocks.</li> </ol> <p>16. Which of the listed methods is a classic method of qualitative (not quantitative) risk assessment?</p> <ol style="list-style-type: none"> <li>a) Simulation modeling (Monte Carlo method).</li> <li>b) Sensitivity analysis.</li> <li>c) Brainstorming with ranking of risks by probability and impact.</li> <li>d) Cash flow analysis.</li> </ol> <p>17. Ecosystem risks for an innovative company can arise due to:</p> <ol style="list-style-type: none"> <li>a) Only internal operational failures.</li> <li>b) Dependence on key partners, platforms, or suppliers whose changes can threaten the business model.</li> <li>c) Changes in the central bank's key rate.</li> <li>d) Turnover of rank-and-file personnel.</li> </ol> <p>18. Diversifying a portfolio of innovation projects helps manage risks by:</p> <ol style="list-style-type: none"> <li>a) Increasing the overall R&amp;D budget.</li> <li>b) Distributing the probability of failure among projects with different risk profiles.</li> <li>c) Guaranteeing the success of at least one project.</li> <li>d) Simplifying the management system.</li> </ol> <p>19. Choose the correct sequence of stages in the classical risk management process:</p> <ol style="list-style-type: none"> <li>a) Financing – Implementation – Control – Analysis.</li> <li>b) Identification – Response – Assessment – Monitoring.</li> <li>c) Identification – Assessment (qualitative/quantitative) – Selection of response strategy – Monitoring and control.</li> <li>d) Insurance – Assessment – Avoidance – Acceptance.</li> </ol> <p>20. A systemic approach to managing innovation risks implies:</p> <ol style="list-style-type: none"> <li>a) Focus only on the largest financial risks.</li> <li>b) Considering the interrelationships between risks of different types and their aggregate impact on the company's objectives.</li> <li>c) Responding to risks only after they occur.</li> <li>d) Delegating risk management to a single department.</li> </ol> <p>21. The "risk acceptance" strategy is appropriate when:</p> <ol style="list-style-type: none"> <li>a) The risk has high probability and high severity of consequences.</li> <li>b) The cost of mitigating the risk exceeds the potential damage, or the risk is inherent to the nature of the innovation activity.</li> <li>c) The risk can easily be transferred to an insurance company.</li> <li>d) The company's management is prone to adventurism.</li> </ol> <p>22. The risk appetite of an innovative company is:</p> <ol style="list-style-type: none"> <li>a) The number of risks in the register.</li> <li>b) The amount of money allocated for insurance.</li> <li>c) The level of risk the company is willing to accept to achieve its strategic objectives.</li> <li>d) A list of prohibited activities.</li> </ol>
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		<p>23. The choice between venture financing and a bank loan for an innovation project depends on its risk structure. A loan will be less risky for the company if:</p> <ol style="list-style-type: none"> <li>The project has very high uncertainty of outcome.</li> <li>The project's main value is intellectual property without physical collateral.</li> <li>The project has predictable cash flow over a relatively short horizon, and the company's assets can serve as collateral.</li> <li>The company is at an early stage.</li> </ol> <p>24. Diversification of an innovation project portfolio as a method of managing strategic risks has a main limitation related to:</p> <ol style="list-style-type: none"> <li>The impossibility of mathematically calculating the correlation between projects.</li> <li>The dispersion of limited resources (financial, personnel, managerial), which can lead to the failure of all projects due to lack of concentration.</li> <li>Increased operational accounting expenses.</li> </ol> <p>25. Which risk is specific to an innovative enterprise (as opposed to a traditional entrepreneurial one) first and foremost?</p> <ol style="list-style-type: none"> <li>Inflation risk.</li> <li>Employee fraud risk.</li> <li>The risk of fundamental infeasibility of a scientific and technical idea.</li> <li>Currency exchange rate risk.</li> </ol>
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**8.7. Example of test tasks for Summative Assessment**  
**Examples of questions and tasks for the graded pass/fail test:**

a) theoretical questions:

- Key Differences Between Innovation Risk and Entrepreneurial Risk
- Classification of Risks in an Innovative Enterprise
- Risk Structure at Different Stages of the Innovation Process
- The Innovation Funnel Model
- Methods for Identifying Risks in Innovations
- Most Effective Methods for Risk Identification in the Early Stages of an Innovation Project
- Methods for Quantitative Risk Assessment Applicable to Innovative Enterprises
- Methods for Quantitative Risk Assessment Applicable to Innovative Enterprises (Duplicate, likely a typo)
- Tools for Strategic Risk Analysis
- Objectives of Using Scenario Analysis
- Essence and Limitations of Simulation Modeling (Monte Carlo Method) for Innovations
- Objectives of Using SWOT Analysis in the Context of Managing Innovation Risks
- Building a Risk Map
- Main Intellectual Property Protection Strategies in the IT Sector
- Technological Risks in Innovative Enterprises
- Ways to Minimize Operational Risks Associated with Implementing New Technology
- Commercialization and Market Entry Risks
- Intellectual Property Risk
- The Role of Organizational Culture in Managing Personnel Risks in an Innovation Environment
- Personnel and Operational Risks in an Innovation Environment

21. Types of Financing for an Innovative Enterprise and Their Features
22. The Essence of the Risk of Undervaluation When Raising Financing (Numbering issue: duplicate 22)
23. Valuation and Value Management Risks
24. Valuation Methods at Different Stages of Innovation
25. Financial Sustainability Indicators of an Innovative Enterprise
26. The Most Important Financial Sustainability Indicators for an Innovation Company at the Growth Stage
27. Cash Flow and Investment Attraction Risks
28. The Impact of Cash Flow Risks on an Innovative Company's Market Entry Strategy
29. Basic Principles of the Agile Approach to Risk Management
30. Role Distribution in an Effective Risk Management Role Model
31. Key Stages of Building a Risk Management System in an Enterprise
32. Risk Culture and Its Formation in an Innovative Company
33. Concepts of "Antifragility" and Strategic Flexibility (Nassim Taleb's Concept)
34. The Concept of Strategic Flexibility and Ways to Develop It
35. Tools Used for Operational Risk Monitoring
36. Strategic Analysis of the External Environment
37. Ecosystem Interaction Risks
39. Reputational and Ethical Risks of Innovations (Note: Number 38 is missing)
40. Sustainable Development Risks and Their Impact on Company Value

b) practical task:

You are the project manager at the Irkutsk-based startup "Baikal Neuro". The company, founded on the basis of the Irkutsk Scientific Center, has developed a software suite for analyzing environmental data of the Baikal Natural Territory and providing early warning of threats (e.g., algal blooms, fire-prone areas). The pilot project with the Federal State Budgetary Institution "Zapovednoye Pribaikalye" has been successful. Now the team plans to enter the market with a commercial product for the regions of Siberia and the Far East.

1. Technology: Unique algorithm for processing satellite and sensor data. A utility model is registered in the Russian Federation.
2. Finances: Received a "Start-1" grant from the Foundation for Assistance to Innovation (5 million RUB). The team's own funds are sufficient for 6 months of operation at the current burn rate (~400k RUB/month). Seeking a regional grant or investor for scaling.
3. Team: 7 people (graduates and postgraduate students of Irkutsk State University).
4. Market: Potential clients are municipal administrations, forestry departments, and mining companies. There are no competitors focused on Baikal, but there are large federal IT companies offering general environmental solutions.
5. Context: High political and media sensitivity regarding Lake Baikal's ecology. The product may fall under regulation as a monitoring system.

Task:

1) Based on the case information, compile a register of key risks for "Baikal Neuro" at the commercialization stage. Fill out the table (at least 5 risks):

№	Category of Risk	Formulation of Risk	Why it is significant for "Baikal Neuro"
1			
2	...	...	...

2) Choose one most critical risk from your register. Justify your choice (2-3 sentences).

3) Develop a concrete plan to manage this risk. Answer the following questions:

- Which response strategy (Avoidance/Reduction/Transfer/Acceptance) was chosen and why?
- What 2-3 specific actions will you take?
- Which indicator (KPI) will show that the risk is decreasing?

**Developed by:**

Associate Prof.



(signature)

Grosheva N.B

The program is developed in accordance with the requirements of the FSES of HE for the major 27.03.05 Innovatics, specialization "Management of Innovative and IT Projects and Products".

The program was reviewed at the meeting of the Department of Humanities and Foreign Languages on March 21, 2025, protocol No. 9.

\_\_\_\_\_ Department Chair  
(signature)



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