



RTU Course "Financial and Commercial Calculation Methods"

22108 Ražošanas un uzņēmējdarbības ekonomikas katedra

General data

Code	IEU538
Course title	Financial and Commercial Calculation Methods
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Post-graduate Studies
Course type	Academic
Field of study	Business Management and Administration
Responsible instructor	Irina Voronova
Volume of the course: parts and credits points	1 part, 3.0 Credit Points, 4.5 ECTS credits
Language of instruction	LV, EN, RU
Possibility of distance learning	Not planned
Abstract	The objective of this course is principles and methods of financial and commercial calculations. The main attention of course is devoted to interest theory (simple and compound interest theory, force of interest, calculation methods of accumulation and present value of money). Additionally course covers calculation methods of annuities. Definition of cash flow, equivalence principle is introduced to students and all the acquired knowledge is applied to analyse different financial problems. Further the course covers introduction to different types of risks in business, risk classification and risk estimation by applying statistical, expert and special coefficient methods, criteria for decision making and examples of their application.
Goals and objectives of the course in terms of competences and skills	The aim of course is to create comprehension of economic and commercial accounts methods, provide knowledge of interest rate theory, idea about information base of financial rent analysis and study annuity calculations principles, to introduce students with risk analysis methods and their application in risk management. The course describes systematization of risk analysis methods and alternative criteria determination for achievement of different financial management aims. Objectives: to develop skills of calculating generalized financial flows; to teach the assessment of change consequences in commercial operations; to develop study proficiencies and skills in commercial deal organization and argumentation.
Structure and tasks of independent studies	Accumulation and discount schemes application in commercial calculation. Tasks. Situation analysis. Test; Accumulation and discount with force of interest using practical examples. Tasks. Situation analysis; Usage of annuities functions in the analysis of financial problems. Tasks. Situation analysis; Application of expert methods in the assessment of investment project. Tasks. Situation analysis; Duration and convexity of bond calculation. Tasks. Situation analysis; Risk identification and its classification. Tasks. Situation analysis; Defining financial risk. Test systems in risk analysis. Tasks. Situation analysis; Decision tree. Max-min criteria. Test.
Recommended literature	<ol style="list-style-type: none"> 1. Voronova, I. Ekonomisko un komercaprēķinu metodoloģija: 1. daļa. – Rīga: Izdevniecība „RTU”, 2007. - 122 lpp. 2. Voronova, I. Ekonomisko un komercaprēķinu metodoloģija: 2. daļa. – Rīga: RTU, 2006. -137 lpp. 3. Voronova, I., Pettere, G. Riski uzņēmējdarbībā un to vadība. Mācību līdzeklis. 2. pārstrādātais izdevums. Apgāds "Rasa ABC". - Rīga, Banku augstskola, 2004. - 176 lpp. 4. Daniel, Jim W., Vaaler, Leslie. Mathematical Interest Theory. - Prentice Hall, 2006.- 496 pp. 5. Buiķis, M. Finanšu matemātika. - Rīga: RSEBAA, 2004. -125 lpp. 6. Jaunzems, A. Risku analīze un vadīšana. -Ventspils : Ventspils Augstskola, 2009. -361 lpp. 7. Kudinska, M. Komerbanku riski un to atbilstība pašu kapitālam. – Rīga: Datorzinību centrs, 2005. – 296 lpp. 8. Risku vadības rokasgrāmata. – Rīga: Dienas Bizness, 2005-2010. 9. Daniel, Jim W., Vaaler, Leslie. Mathematical Interest Theory. 2nd Edition - Hardcover, Mathematical Association of America, 2008. - 658 pp. 10. Daniel, Jim W., Vaaler, Leslie. Mathematical Interest Theory. Student Manual. Paperback Mathematical Association of America, 2008. -120 pp. 11. Damodaran, A. Investment Valuation. Tools and Techniques for Determining the Value of Any Asset. Second edition. – John Wiley&Sons, Inc., 2002. -1008 pp. 12. Абчук, В.А. Риске в бизнесе, менеджменте и маркетинге. –Сант-Петербург: Изд-во Михайлова В.А., 2006. – 480 с. 13. Криничанский, К.В. Математика финансового менеджмента. - Москва: Дело и Сервис, 2006. – 256 с. 14. Четыркин, Е.М. Финансовая математика. - Москва: Дело, Академия народного хозяйства, 2008. – 400 с. 15. Четыркин, Е.М. Финансовые риски.- Москва: Дело АНХ, 2008. –176 с .
Course prerequisites	Subject is based on the knowledge obtained at the previous level of higher education, for example, economic statistics, theory of probability, entrepreneurial planning as well during master's study 1st semester.

Course outline

Theme	Hours
1.1. Introduction. Course requirements. Basic principles of economic and commercial calculations.	1
1.2. Simple and compound interest.	3

1.3. The force of interest.	5
1.4. Financial annuity and determination of its dimensions.	9
1.5. Investment efficiency. Techniques of some cash flow risk analysis.	3
1.6. Fixed security portfolio analysis.	7
Paragraph 2. Risks in entrepreneurship. Risk management.	4
2.2. Risks assessment.	10
2.3. Decision making logics. Decision making in risk and uncertainty circumstances.	6

Learning outcomes and assessment

Learning outcomes	Assessment methods
To be able to develop value equation and analyse elementary financial compound interest problems.	To fulfil 10-15 problems.
To be able to define and use the most important compound interest functions including annuities certain.	To fulfil 7-10 problems. Test.
To be able to apply annuity functions in determining duration and analyse the percentage in risk commercial transactions.	To fulfil 7-10 problems. Tests.
To be able to do risk factors analysis and assess it, using different methods of assessment and summing.	To fulfil 3-5 problems.
To be able to use decision making criteria in uncertainty and risk circumstances.	To fulfil 3-5 problems. Test. Final test - exam with a grade.

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	3.0	4.5	1.0	1.0	1.0		*	