

Title of the Course		FINANCIAL MATHEMATICS	
Amount in credit points/ECTS)	2/3	Volume (in hours)	80
Prior knowledge	Algebra at the level of a secondary school		
Science Sector			
Science Subsector			
Summary of academic hours		Amount (academic hours)	
Distance learning		40	
Contact hours / video lessons		8	
Exercises, self – assessment questions and tests		14	
Individual work/ discussions in distance		16	
Exams/tests		2	
1 st level professional study programme	Marketing and Trade		
Author(s) of the course	MBA Inese Vārslava		
Lecturer(s) of the course	Bc.math. Kaspars Salenieks		
Goal of the course:	After the course a students is able to independently do calculation about the profitability of different finance operations, advantage of investments in different time stages, and can find appropriate instruments from the offer.		
Requirements for obtaining credit points (structure of course evaluation):	The final evaluation is calculated: Moodle discussion/tasks – 50% Exam – 50% <i>For obtaining final evaluation, both activities should hold successful evaluation – not below 4 points.</i> <i>Final evaluation is the average grade in 10-point system, in proportion of percentage distributed amongst both activities</i>		
Study Results			
1. Knowledge: 1.1.A student lists the differences between the simple and complex interest rates; 1.2.A student describes different investments types, the principles of operation inflation; 1.3.A student names the terminology of finance mathematics. 2. Skills: 2.1.A student completes calculation with various interest rates; 2.2.A student calculates the asset and return indicators of finance operations with the help if a computer; 3. Competences: 3.1.A student assesses the offered finance instruments. 3.2. A student chooses the most appropriate option for the specific situation.			
Content of the Course			

No.	Subjects	Contact hours/ video audio lessons	Distance learning	Exercises, self- assessment questions and tests	Individual task – remote discussion. Description of the individual task is available in the E- studies	Exam
1.	Simple interest rate	8	6	1	1	2
2.	Complex interest rate		5	2	1	
3.	Value of money – discounting		5	2	2	
4.	Equivalence of different interest rates (equal expected value). Influence of inflation.		5	2	1	
5.	Value of money flow		5	1	2	
6.	Investment assessment		4	2	3	
7.	Present and future value of equal periodical instalment		6	2	2	
8.	Credit, use of credits in various situations		4	1	3	
TOTAL:		8	40	14	16	2
80						
Mastering the course and successfully passing examination, student is capable of (knowledge, skills and competencies)						
Study Results:		Evaluation Criteria				
		(40-69%)		(70-89%)		(90-100%)
Knowledge						
Describes operation principles of simple and complex interest		Explains the operation of interest rates with the help of formula		Illustrates the differences and points to the most crucial conditions		Involves in a discussion about specific questions connected to interest rates
Describes the notion of discounting and names application examples		Explain the notion if given a formula		Describes explanation without the help of a formula		Names application examples and get involved in a discussed about discounting

Explains the notions of equivalent rates and inflation	Explains inflation	Explains inflation formula and its essence	Compares equivalent rates
Recognizes elements of money flow	Describes basic formulas of money flow calculations	Explains the meaning of every element of money flow	Get involved in a discussion about the choice of the best money flow
Names investment indicators, which are considered when calculating profitability of investments	Names 1 indicator	Names different indicators for different purposes	Gets involved in a discussion with examples of investment comparison
Explains the difference between present and future value	Recognizes formulas of present and future value	Explains the differences between the calculations of present and future value	Independently explains the theoretical aspects of value calculations
Names the terminology related to crediting	Recognizes terminology	Names some credit terms and recognizes indicators	Describes all credit characteristics in a free discussion
Skills			
Calculates indicators for simple and complex rate schemes	Calculates result with 2 methods for 1 year	Calculates with 2 methods for n years	Calculates with any method for time period
Calculates discounting indicators	Gets results with the help of basic discounting	Gets results with the help of basic discounting for any time period	Calculates all discounting indicators
Anticipates the influence of inflation on money	Calculates inflation influence for 1 year	Calculates inflation influence for any year	Calculates inflation rate given the value change
Calculates the indicators of money flow and correlated results	Calculates simple money flow and indicators	Calculates complex money flow indicators	Calculates the necessary indicators for money flow comparison
Calculates present and future value of finance rents	Calculates future value of finance rents	Calculates present value of finance rents	Calculates indicators of finance rents
Competences			
Detects the most financially profitable investment opportunities	Compares investment given simple and complex rate formulas	Compares investment described with money flow formulas	Compares complex investment flows
Acknowledgement of the obtained study results			

Study Results	1.	2.	3.
Evaluation Method			
Moodle discussions/tasks	X	X	X
Exam	X	X	X

Core Literature	
1.	Inese Vārslava, "Tālmācības studiju kurss "Finanšu matemātika" ", Rīga (2007)
2.	M. Sullivan, Abe Mizrahi, Mathematics: An Applied Approach, (2004)
3.	M. Jaunzeme, Finanšu matemātika: definīcijas, formulas, piemēri, uzdevumi. Trešais izlabotais izdevums. Rīga, Biznesa augstskola Turība (2004)
Additional Literature	
1.	M. Buiķis, Finanšu matemātika, RISEBA (2004)
2.	A. Jaunzems, "Finanšu matemātika", Ventspils Augstskola (2009)
3.	M. Hazans, Kā aug nauda: Ievads finanšu matemātikā. Rīga (1994)
Recommended Periodicals	
1.	iFinances, žurnāls