

Course description

Course name		Financial Mathematics				Course code			
Major		Finance & Accounting							
Profile		Practical							
Level of studies		First-cycle studies							
Specialization		Course common to all specializations							
Form of studies		Full-time studies							
Semester		II				Language of instruction	English		
Prerequisites for the course						Basic courses	N		
Form of crediting		End-of-term test		Number of ECTS points: 4				Methods of assessment	
Form of classes and other		Number of hours in semester		Total	4	direct contact classes	1,8		practical classes
		Total	Student's workload	Direct contact	Verification of teaching effects				Importance in %
Lecture		45	15	30	written exam				50%
Classes		45	30	15	tests, class participation				50%
Total number of hours:		90	45	45					Total: 100%
Categories of teaching effects	No.	Course teaching effects			Methods of teaching effects verification	Major-related effects	Area based effects	Forms of realization	
Knowledge	1.	Student is familiar with the concept of the time value of money.			written exam	K1_W14+	S1A_W06+	L	
	2.	He knows the idea: annuity, credit, capitalization.			written exam	K1_W14+	S1A_W06+	L	
Skills	1.	Student is able to calculate present and future value of money using different methods of capitalization.			written exam	K1_U09+	S1A_U02+	C	
	2.	Student is able to calculate the value of present and future annuity and perpetuity.			written exam	K1_U09+	S1A_U02+	C	
	3.	He can build a variety of debt repayment plans, compute the height of payments, height of interest installment.			written exam	K1_U09+	S1A_U02+	C	
	4.	Student can measure debt instruments.			written exam	K1_U09+	S1A_U02+	C	
Social competence	1.	Student has a self-awareness of the need to develop his/her knowledge and skills.			written exam	K1_K02+	S1A_K01+, S1A_K06+, S1A_K07+	L	

	2.	Student can flexibly look for and choose problem-solving methods.	written exam	K1_K09+, K1_K10+	S1A_K07+, S1A_K01+, S1A_K06+	LC
	3.	Student is prepared to communicate, persuade and defend his/her views in the name of achieving common goals	written exam	K1_K09+, K1_K10+	S1A_K07+, S1A_K01+, S1A_K06+	LC

Course supervisors

Form of classes	Course supervisors
Lecture	Prof. dr hab. Andrzej Nowak
Classes	Prof. dr hab. Andrzej Nowak

Teaching content

Lecture	Teaching methods	Lecture
No.	Subject area	Number of hours
1.	Interest rates - the concept, types. The rate of return.	6
2.	Time value of money - the future and the present. Capitalization: simple, complex and continuous. Discounting	6
3.	Annuity calculation - future and present value.	4
4.	Credit - repayment schemes, cost of credit, effective interest rate	6
5.	Valuation of debt instruments - discounted cash flow method.	4
6.	An elementary calculation of the insurance premium.	4
Total no. of hours:		30

Classes	Teaching methods	Solving problems and mathematical exercises
No.	Subject area	Number of hours
1.	Time value of money: present and future. Capitalization: simple, complex and continuous. Rate of return. Discounting	6
2.	Annuity calculation: current and future value of annuity	4
3.	Settlement of loans and advances: a debt repayment plan	2
4.	Valuation of debt securities	2
5.	Test	1
Total no. of hours:		15

Primary literature:

1	Sztuka zarządzania finansami / Zofia Wilimowska, Marek Wilimowski. – Bydgoszcz Oficyna Wydawnicza Ośrodka Postępu Organizacyjnego, 2001
2	Matematyka finansowa : podstawy teoretyczne, przykłady, zadania / Mieczysław Sobczyk. - Warszawa :

	Placet, 2000
3	Matematyka i jej zastosowanie w naukach ekonomicznych / Janusz Piszczala; Akademia Ekonomiczna w Poznaniu, Poznań 2000
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Secondary literature:

1	Metody matematyczne dla bankowców / Michał Kolupa - Warszawa : Poltext, 1995.
2	Matematyka finansowa : instrumenty pochodne / Jacek Jakubowski, Andrzej Palczewski, Łukasz Stettner ; red. Marek Rutkowski - Warszawa : Wydawnictwa Naukowo-Techniczne, 2003
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Course co-ordinator

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Director of Institute

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