

<b>Course title: Mathematics for economists</b>			
<b>Lecturer: Ljiljana Cvetkovic</b>			
<b>Course status: Required, Second Semester</b>			
<b>ECTS: 8</b>			
<b>Requirement: - none</b>			
<b>Course aim</b> Basic knowledge of financial mathematics, matrix theory and calculus.			
<b>Course outcome</b> Understanding and mastering the basic mathematical tools for economists.			
<b>Course content</b> <i>Theory classes</i> <i>Financial mathematics:</i> <ul style="list-style-type: none"> <li>➤ Interest</li> <li>➤ Securities</li> <li>➤ Compound interest</li> <li>➤ Periodical investments</li> <li>➤ Loan amortization</li> <li>➤ Non-risk and risk investments</li> </ul> <i>Matrix theory:</i> <ul style="list-style-type: none"> <li>➤ Matrices and vectors</li> <li>➤ Linear systems</li> <li>➤ Applications in economy</li> </ul> <i>Calculus:</i> <ul style="list-style-type: none"> <li>➤ Derivatives</li> <li>➤ Integrals</li> <li>➤ Differential equations</li> <li>➤ Applications in economy</li> </ul> <i>Practice classes</i> The exercises cover practical examples that follow the lecture.			
<b>Recommended Literature:</b> <ol style="list-style-type: none"> <li>1. Ljiljana Cvetković: „Finansijska matematika“, A Dizajn, Sarajevo, 2014.</li> <li>2. Ljiljana Cvetković, Vladimir Kostić: „Zbirka zadataka iz matematike“, Symbol, Novi Sad, 2002.</li> <li>3. Marek Capinski, Tomasz Zastawniak, Mathematics for Finance. An Introduction to Financial Engineering, Springer Undergraduate Mathematics Series, Springer, 2003.</li> </ol>			
<b>Number of active teaching classes</b>	Theory classes: 2		Practice classes: 2
<b>Teaching methods:</b> Theory classes followed by numerous examples. Independent work in exercises. Part that makes a logical unit can be taken in the year in the form of two modules. First module: determinants and systems of linear equations. Matrix. Polynomials functions. Realistic and rational functions of one variable - differential calculus and applications. Second module: Economic functions. Real functions of one variable-definite and indefinite integrals and applications. Real functions of several variables-differential calculus and applications. Financial Mathematics.			
<b>Knowledge assessment</b>			
<b>Pre-exam tasks</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
In-class activity		written exam	<b>40</b>
Practice classes		oral exam	
Mid-term tests	<b>60</b>	.....	
Seminar papers			

