



**University “ Ukshin Hoti” Prizren**  
**Faculty of Economics**  
**Programie: International Management**

<b>LEARNIN PROGRAME – SYLLABUS</b>							
<b>Level of Studies</b>		Bachelor	<b>Program</b>	IM	<b>Academic Year</b>	2019/20	
<b>Course</b>		<b>Business Mathematics</b>					
<b>Year</b>	I	<b>Status of the Course</b>	Obligated	<b>Code</b>		<b>ECTS credits</b>	
<b>Semester</b>	I					<b>6</b>	
<b>Learning Weeks</b>		15		Learning Hours: 60		Lectures	Exercises
						<b>2</b>	<b>3</b>
<b>Learning Methodology</b>		Lectures, exercises, homework, tests, consultations.					
<b>Consultations</b>							
<b>Lecturer</b>		Prof. Dr. Fevzi Berisha		e-mail	<a href="mailto:exiberisha@hotmail.com">exiberisha@hotmail.com</a>		
				Tel.	044 126 989		
<b>Assistant</b>		Ass. AneraAlishani		e-mail	<a href="mailto:anera.alishani@uni-prizren.com">anera.alishani@uni-prizren.com</a>		
				Tel.	045 280 532		

<b>Study purpose of the course</b>	<b>Student Benefits</b>
<p>The purpose of the Math course is to enable students to gain the necessary knowledge on the role and importance of general mathematics and financial mathematics in relation to basic principles, mathematical methods and models and how to apply them in analysis during lectures and exercises from the economic field.</p>	<p>Upon completion of this course, student will be able to use and understand the notions of high mathematics so that those knowledge can assist as a support device in the subjects in which the use of the mathematical apparatus is indispensable. Students should be able to:</p> <ul style="list-style-type: none"> <li>• to apply numerical communities to the consideration and presentation of other meanings from both algebra and mathematical analysis,</li> <li>• to know the meaning of the matrix and the determinants, as well as to prove the determinants themselves that apply to the solution of the equation system,</li> <li>• to solve systems of equations in different forms and</li> </ul>

	<p>ways,</p> <ul style="list-style-type: none"> <li>• to know the meaning of the verses and the verse itself and the verse and the arithmetic,</li> <li>• to present different forms of numeric verses</li> <li>• to apply general mathematics knowledge in solving financial mathematics problems</li> <li>• know the concepts from financial mathematics and their calculations, percentage, interest rate, interest deposits, rent;</li> <li>• to present the loan amortization plan</li> </ul>		
<b>Forms of teaching and learning lessons</b>			
Lectures, exercises, presentation, solutions for of exercises and of problems, consultations			
<b>Conditions for realization of the subject:</b>			
Table marking, problem solving, discussions; student engagement in exercises			
<b>Methods of assessment and passing criteria (in%)</b>			
<p>The assessment is done through the test, while the final grade consists of five components:</p> <ul style="list-style-type: none"> <li>• Regular attendance and engagement 10%</li> <li>• Engagement in Exercises 10%</li> <li>• First intermediate evaluation 15%</li> <li>• Second intermediate evaluation 15%</li> <li>• Final exam with oral or written test 50%</li> </ul> <p style="text-align: center;">Total: 100%</p>	<b>Assessment in %</b>	<b>Final Grade</b>	
	91 - 100	10 ( ECTS – A)	
	81 – 90	9 ( ECTS - B)	
	71 – 80	8 ( ECTS - C)	
	61 – 70	7 ( ETCS - D)	
	51 – 60	6 ( ETCS - E)	
	40 - 50	5* ( ETCS – FX)	
<b>Obligations of the Students:</b>			
<p><b>Lectures</b></p> <p>The student should be regular in lectures and exercises. Take advantage of the preferred literature. To accomplish the tasks given during the lectures. Have maximum focus and attention during lectures. Respect the lecture schedule.</p>	<p><b>Exercises</b></p> <p>Engage in exercises in solving tasks. Cooperate with others on methods of solving tasks. To discussed the solutions</p>		
<b>Student load for the subject</b>			
<b>Activity</b>	<b>Hours</b>	<b>Days/Weeks</b>	<b>Total:</b>
Lectures	2	15	30
Exercises	3	15	45
Consultations with the Lecturer/Assistant	2	3.5	7
Time for self-study	2	15	30
Preparation for final exam	3	7	28
		<b>Total:</b>	<b>150</b>

Week	Lecture		Exercises	
	Topic	Hours	Topic	Hours
1.	<b>Elements of linear algebra</b>	2		3
	<ul style="list-style-type: none"> <li>• Multiplication of matrices with number</li> <li>• Addition of matrices</li> <li>• Multiplication of matrices and the power of the square matrix</li> <li>• The square of the matrix</li> </ul>		Exercises from actions with matrixes	
2.	<b>Determinants</b>	2		3
	<ul style="list-style-type: none"> <li>• Determinants</li> <li>• Reverse matrix</li> <li>• Matrix rank</li> </ul>		Exercises from determinates and finding inverse matrices	
3.	<b>Systems of linear equations</b>	2		3
	<ul style="list-style-type: none"> <li>• Solutions of linear equations systems</li> <li>• Systems of linear equations</li> <li>• Kramer rules</li> <li>• Discussion of system solutions</li> </ul>		Exercises from solving the system of equations	
4.	<b>Methods for solving systems of linear equations</b>	2		3
	<ul style="list-style-type: none"> <li>• Solving linear Gaussian equation systems</li> <li>• Systems of homogeneous linear equations</li> </ul>		Exercises from solving the system of homogeneous equations	
5.	<b>Numeric strings</b>	2		3
	<ul style="list-style-type: none"> <li>• Meaning of numeric string</li> <li>• Monotony and limitation of numerical string</li> <li>• The string limit</li> </ul>		Exercises from solving the string limit and the formation of strings	
6.	<b>Arithmetic and geometric progression</b>	2		3
	<ul style="list-style-type: none"> <li>• Arithmetic Progress</li> <li>• The sum of the limits of arithmetic progression</li> <li>• Geometric Progress</li> <li>• The sum of the geometric progression limits</li> </ul>		Exercises fromgeometric and arithmetic progression and their implementation	
7.	<b>Function limit</b>	2		3

	<ul style="list-style-type: none"> <li>• Understanding the function limit</li> <li>• Mathematical Limit Actions</li> <li>• Some important limits</li> <li>• Function Chart Asymptotes</li> <li>• Continuity of functions</li> </ul>		Solving exercises over the Function Limit, Examples of Limit Units	
8.	<b>Function Derivatives</b>	2		3
	<ul style="list-style-type: none"> <li>• Meaning of function derivative</li> <li>• Derivative Rules</li> <li>• Table of formulas and basic derivation rules</li> </ul>		Solving Functional Derivatives, Sample Derivatives Derivative Sample and its Implementation	
9.	<b>Function Derivatives</b>			3
	<ul style="list-style-type: none"> <li>• Geometric Derivative Meaning</li> <li>• Understanding the differential and its geometric interpretation</li> <li>• High order derivatives</li> </ul>		Examples of application of function derivation in geometry and economic	
10.	<b>Application of the function derivative</b>	2		3
	<ul style="list-style-type: none"> <li>• Function Monotony</li> <li>• Function Extremisms (Maximum and Minimum)</li> <li>• Correlation of curvature (concave and convexity) and inflection point</li> <li>• General plan of function review and chart construction</li> </ul>		Examples of application of function derivative in finding extreme function values as well as review of monotony and concave function	
11.	<b>Multi-variable functions</b>	2		3
	<ul style="list-style-type: none"> <li>• Partial Derivatives</li> <li>• Full derivative</li> <li>• Extremes of multi-variable functions</li> </ul>		Examples of implementing multi-variable functions	
12.	<b>Integral indefinite and integral integer</b>	2		3
	<ul style="list-style-type: none"> <li>• Examples of implementing integral integrals in the economy</li> </ul>		Examples of the implementation of the indefinite and fixed integrals in concrete economic problems	
13.	<b>Common differential equations</b>	2		3
	<ul style="list-style-type: none"> <li>• Differential equation with separated variables,</li> <li>• homogeneous equation,</li> <li>• linear equation</li> </ul>		Examples on the application of differential equations in economic problems	
14.	<b>Elements of Financial Mathematics</b>	2		3
	<ul style="list-style-type: none"> <li>• Measuring simple interest</li> <li>• Computation of compound</li> </ul>		Uniting deposits and rentals in concrete examples	

	interest <ul style="list-style-type: none"> <li>• Deposits and rent</li> <li>• Preliminary Deposit</li> <li>• Depressive periodic deposition</li> <li>• Variable periodic deposits</li> <li>• Periodic rental anticipative</li> <li>• Rents periodic discursive</li> </ul>			
15.	<b>Loans</b>	2	Different examples on the drafting of the loan amortization plan	3
	<ul style="list-style-type: none"> <li>• Return of the loan</li> <li>• Calculating installments when loan and annuity are known</li> <li>• Calculating the first installment when the loan is known</li> <li>• Calculating any installment with the help of annuity</li> <li>• Calculation of the Paid Loan</li> <li>• Draw up the amortization plan</li> </ul>			

**LITERATURE:**

1. Ajet Ahmeti (2012), "Matematika për ekonomistë", Prishtinë 2012
2. Faton Berisha: Matematika Per Biznes, 2005
3. Muharrem Berisha dhe Faton Berisha (2006), Matematikë për biznesë dhe ekonomiks, "Iliria" 2006
4. Ronald Harshbarger and James Reynolds (2013), "Mathematical applications- for the management, life and social sciences" 10<sup>th</sup> ed., Boston, New York,

**Remarks:**

- The student should be mindful and respect the rules and the institution.
- Must observe the schedule of lectures, exercises, and be attentive to the lesson.
- It is mandatory to have a test ID.
- When designing works, the student must adhere to the instructions provided by the teacher.
- Do not use mobile phones during the test hours.