

Study program : Hotel and Tourism Management				
Type and level of studies: Academic studies, first level				
<b>Course unit: Business mathematics</b>				
<b>Teacher in charge : Popovic Z. Branislav, PhD</b>				
Language of instruction: English				
ECTS: 8				
Prerequisites: None				
Semester: Winter semestar				
<b>Course unit objective</b>				
Preparing students for independent application of mathematical methods needed for representing the models in the sphere of economic problems, situations and processes.				
<b>Learning outcomes of Course unit</b>				
The students have acquired the necessary knowledge and they are ready to apply mathematical methods for setting and solving problems from different spheres of economy and business.				
<b>Course unit contents</b>				
<i>Theoretical classes:</i>				
<b>Systems of linear equations. Matrices.</b> The definition of a system of linear equations with two variables. System of linear equations and extended matrix of coefficients. Gauss-Jordan method of elimination. Basic operations with matrices. The inverse of a square matrix and its applications. Matrix equations and systems of linear equations.				
<b>Financial Mathematics.</b> Simple interest. Compound interest. The future value of the annuity. The present value of the annuity. Depreciation and amortization.				
<b>Continuity and differentiability of functions of a real variable.</b> Elementary functions. Definition and basic properties of the boundary values of functions. Asymptotic behavior of function. The definition of function continuity and breakpoints. The definition of derivative and its geometric interpretations. The basic rules of calculating the derivative. Analysis of boundary indicators in business and economics.				
<b>Testing flow functions and graphing.</b> Application of the first derivative and local extreme of function. Concave function. Application of the second derivative and inflection points. The strategy of drawing, sketching and testing the performance of graphics functions.				
<b>Integrals.</b> Indefinite integral. Definitions, formulas, properties and integration by substitution. Definite integral. Definition and basic theorems. Applications of integral calculus in business and economics.				
<b>Differential equations.</b> Basic concepts. Solving methods. Applications in economics and business.				
<i>Practical classes:</i>				
The applications of theoretical knowledge for solving problems and tasks in these areas.				
<b>Literature</b>				
<i>Barnett, Raymond A., Zieger, Michael R., Byleen , Karl E.. Applied Mathematics for Business, Economics, Life Science, and Social Sciences. 8<sup>th</sup> edition, Pearson Education, Inc</i>				
<b>Number of active teaching hours</b>				<b>Other classes</b>
Lectures:	Practice:	Other forms of classes:	Independent work:	
3	3	0	0	0

<b>Teaching methods</b>			
The theoretical exposition, case studies analysis, discussions			
<b>Examination methods (maximum 100 points)</b>			
<b>Exam prerequisites</b>	<b>No. of points:</b>	<b>Final exam</b>	<b>No. of points:</b>
Student's activity during lectures	6	oral examination	25
practical classes/tests	45	written examination	24
Seminars/homework	-		
Project	-		
Other	-		
<b>Grading system</b>			
<b>Grade</b>	<b>No. of points</b>	<b>Description</b>	
<b>10</b>	91-100	Excellent	
<b>9</b>	81-90	Exceptionally good	
<b>8</b>	71-80	Very good	
<b>7</b>	61-70	Good	
<b>6</b>	51- 60	Passing	
<b>5</b>	<51	Failing	

**(Table 5.2) Course unit description**