

Syllabus

Basic data of the subject	
University/Faculty:	University of Applied Sciences in Ferizaj/ Faculty of Engineering and Informatics
Academic unit:	Industrial Engineering with Informatics
Title of the subject:	Mathematics 2
Level:	Bachelor
Course Status:	Core
Year of studies:	I, second semester
Number of hours per week:	4
Value of Credits - ECTS:	6
Time / location:	Friday, 9:00-12:00
Course lecturer:	Prof. Asst. Dr. Valdete Loku
Contact details:	Valdete.loku@ushaf.net
Course Description	
Course Description	<p><i>Mathematics II, covers the basic concepts of single-variable functions, their properties and its graphical representation. Elementary functions and their graphical representation. Numerical sequences, the meaning of the numerical sequences and its properties. Limit of numerical sequences, and convergent sequences. Function limit and some form of limits. Continuity of function. Function point discontinuity and their types. Understanding the function derivative. Function derivation rules and derivative table of elementary functions. Function differential. Basic derivative theorems. Implementation of derivatives in graphical representation of functions. Indefinite integral of function. Methods of integration. Integration of some function classes. The set integral of the function. Calculation of a given integral. Implementation of the set integral. Two-variable functions.</i></p>
Objectives of the course:	<p><i>The purpose of this course is to provide students with basic knowledge in the field of higher mathematics and their application in industrial engineering and beyond.</i></p>
Expected learning outcomes:	<p><i>Upon completion of this module, students will be able to:</i></p> <ul style="list-style-type: none"> • <i>Understand basic concepts in mathematics</i> • <i>To solve the tasks given by Mathematics I</i> • <i>Analyse tasks and different problems from mathematics I.</i> • <i>Apply knowledge gained from Mathematics I in the field of industrial engineering and computing.</i> <p><i>This module should also develop the following skills among students:</i></p> <ul style="list-style-type: none"> • <i>Communication and presentation skills,</i> • <i>Teamwork skills,</i> • <i>Interpretation of numbers, tables and graphs,</i>

	<ul style="list-style-type: none"> • <i>Writing skills.</i> 		
Contribution to the student load (which must correspond with learning outcomes)			
Activity	Hour	Day/Week	In total
Lectures	2	15	30
Theoretical exercises / laboratory	2	15	30
Internship			
Contacts with teacher / consultations	1	1	1
Field exercises			
Midterm, seminars and projects.			
Homework			
Self-learning time student (at the library or at home)	4	15	60
Final preparation for the exam	6	3	27
Time spent on evaluation (tests, quiz and final exam)	2		2
Projects and presentations			
Total			150
Teaching methodology:	<i>Lectures and exercises combined with case studies and classroom discussions.</i>		
Assessment methods:	<i>Final exam rated 100% of the grade. The exam consists of two parts, the written exam and the oral exam.</i>		
Literature			
Basic Literature:	<i>Dr.sc.Razim Hoxha, Matematikë II, 2015, Prishtinë. Dr.sc.Sadri Shkodra, Matematikë II. 2004, Prishtinë.</i>		
Additional Literature:	<i>G.M.Fihtengolc , Bazat e analizës matematike II, 1970, Prishtinë.</i>		

Designed learning plan	
Week:	Lectures and exercises to be held
Week one:	Basic concepts of the function of one variable, properties and some classes
Week two:	Elementary functions, such as exponentially function, logarithmic functions, trigonometric functions etc.
Week three:	Numerical sequences and their properties
Week four:	Limit of sequences and their properties, convergent sequences
Week five:	<i>Limit of functions and their properties.</i>
Week six:	<i>Continuity of functions and their properties.</i>

Week seven:	<i>Differential of functions and their properties, such as derivative of the sum, difference, product, ration etc.</i>
Week eight:	<i>Derivative of the compound functions and their application.</i>
Week nine:	<i>Basic theorems od derivatives, such as Role Theorem, Lagrange theorem, etc and their applications.</i>
Week ten:	<i>Application of the derivatives in study of the functions and their graphs</i>
Week eleven:	<i>The concept of the indefinite integral and basic methods of integration</i>
Week twelve:	<i>Integration of some classes of functions, such as rational, irrational , trigonometric etc.</i>
Week thirteen:	<i>Concept of the definite integral, and their properties</i>
Week fourteen:	<i>Application of the definite integral in practice</i>
Week fifteen:	<i>Function with several variables</i>

Academic policies and rules of conduct

<i>Regular attendance of lectures and exercises is necessary, as well as active participation with discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode.</i>
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