SYLLABUS OF THE SUBJECT "MATHEMATICS"

Basic data of the subject	
Academic unit:	Faculty of Life and Environmental Sciences
Subject title:	Mathematical
Program:	Forestry and Environmental Sciences
Level:	Bachelor
Case Status:	Obligatory
Year of studies:	I
Number of hours per week:	3/2
Credit value – ECTS:	6
Time / location:	15^{30}-17^{15} / location 215
Subject teacher:	Prof. Asoc. Dr. Mariana Nikolla
Contact details:	mnikolla@ubt.edu.al
Course description:	Basic concepts in mathematics and logic symbols Real numbers and their properties Mathematical induction and the binomial formula. Elements of linear algebra. Matrices. Matrix operations Determinants. Systems of linear equations Numeric ranges and progressions, absolute values. Numeric string limit. Function, some important classes of functions. Function limit, one-sided limits. Continuity, tipping points. Derivative, the geometric meaning of the derivative. Equation of tangents. Differential, geometric meaning, its application in approximate calculus. Indefinite integral, definite integral and its applications. Differential equations. Some types of first order differential equations. Elements of probability theory and mathematical statistics.
Purpose of the course:	The formation of students with the basic concepts and methods of mathematics that are necessary for the acquisition of profile modules as well as their ability to apply mathematical models in solving various problems in the relevant fields. The fundamental principles and techniques of Probability Theory are also given.
Learning outcomes:	At the end of this course, students will be equipped with the basic concepts and methods of mathematical analysis, linear algebra and probability theory, necessary for solving various problems in the field of Forestry and Environmental Sciences. Students gain knowledge of different analyzes from the field of study and be equipped with sufficient knowledge to understand the contemporary literature necessary for the field of study. Enabling them to work with more sophisticated models from the study profile.

Activity	Hours	Day/Week	Total
Lectures	3	15	45
Theoretical/laboratory exercises	2	15	30
Practical work			
Contacts with the teacher/consultations	1	15	15
Field exercises			
Colloquiums, seminars	3	2	6
Homework			
Student's independent study time (in the library or at home)	2	15	30
Final exam preparation			18
Time spent on assessment (tests, quizzes, final exam)			6
Projects, presentations, etc			
Total			**150 orë (6 ECTS)**
Teaching methodology:	Lectures, exercises, colloquiums, exams, homework.		
Evaluation methodology:	First test: 15%, Second test: 15%, Continuity: 10%, Short tasks 5%, Final exam: 55%		
The literature			
Literatura primare:	R.Çuko, M.Nikolla- Mathematics, Tiranë, 2022		
Literatura shtesë:	A.Ahmeti- Mathematics, Prishtine, 2015 F.Berisha, A.Zejnullahu – Mathematics, , Prishtine 2003		

Designed lesson plan:		
Week	**Lectures**	**Exercise**
First week:	Notifying students of the subject syllabus.	Tasks from elementary mathematics

Second week:	Basic concepts in mathematics and logical symbols.	Basic concepts in mathematics and logical symbols.
Third week:	Real numbers and their properties	Real numbers and their properties
Fourth week:	Mathematical induction and the binomial formula.	Mathematical induction and the binomial formula.
Fifth week:	Matrices. Matrix operations	Matrices. Matrix operations
Sixth week:	Determinants. Systems of linear equations	Determinants. Systems of linear equations
Seventh week:	Number ranges and progressions.	Number ranges and progressions.
Eighth week:	The first test	The first test
Ninth week:	Function and limit of function.	Function and limit of function.
Tenth week:	The differential of the function.	Derivative of function, equation of tangent, formula of approximations.
Eleventh week:	The Indefinite Integral. Integration methods.	Indefinite integral, table of integrals, integration by substitution and parts.
Twelfth week:	Definite integral. Newton-Leibniz formula.	The definite integral. Its applications.
Thirteenth week:	Differential equations	Ekuacionet diferenciale me variabla të ndashem, homogjen dhe linearë.
Fourteenth week:	Elements of probability theory.	Elements of probability theory.
Fifteenth week:	The final test	The final test

Academic policies and code of behavior

Students are obliged to attend lectures regularly, switch off their mobile phones, enter the classroom on time and keep calm during the lesson.