CALCULUS I(DIFFERENTIAL CALCULATIONS)

1	Course Title:	CALCULUS I(DIFFERENTIAL CALCULATIONS)
2	Course Code:	MAT1071
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	none
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. OSMAN BİZİM
15	Course Lecturers:	Prof. Dr. Osman Bizim Öğr.Gör. Dr. Betül Gezer
16	Contact information of the Course Coordinator:	Uludag University, Art and Science Faculty Department of Mathematics, 16059 Görükle Bursa-TURKEY 0 224 294 17 57/ obizim@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of this course is to give basic subjects of mathematics.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	To prepare the basic infrastructure of Mathematics.
	2	Introduce the important theorems of mathematics and its applications
	3	Effectively learn how to use mathematics in solving engineering problems.
	4	Limits, derivatives and applications of the calculations to know
	5	Create mathematical background for other courses.
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21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Sets, real numbers and their properties, and properties of absolute value.	Examples of the sets, real numbers, and absolute value
2	Systems of equations, coordinates, relations and their properties.	Examples of the systems of equations, coordinates and relation.

3	The concept of function and special functions (trigonometric, inverse trigonometric, exponential, logarithmic, hyperbolic, inverse hyperbolic).	Examples of the functions.
4	The conics (circle, ellipse, parabola, hyperbola) and their properties.	Examples of the conics
5	Polar coordinates, parametric equations and their properties	Examples of the polar coordinates, parametric equations.
6	Limit concept and properties	Examples of the limit
7	The right-left limit, infinite limit and their properties	Examples of the right-left limit, infinite limit
8	Continuity and properties of continuous functions	Examples of the continuity and properties of continuous functions.
9	The derivation and properties	Examples of the derivation
10	Geometrical and physical interpretation of the derivative	Examples of the geometrical and physical interpretation of the derivative
11	The properties of the differentiable functions	Examples of the properties of the differentiable functions
12	The differential and differentiable functions, their properties	Examples of the differential
13	Increasing and decreasing functions, concavity of curves	Examples of the increasing and decreasing functions, concavity of curves
14	Local and absolute max-min, problems of maxima and minima, curve sketching.	Examples of the local and absolute max-min, problems of maxima and minima, curve sketching.
22	Textbooks, References and/or Other Materials:	Genel Matematik, Diferensiyel ve İntegral Hesap, O. Bizim, A. Tekcan, B. Gezer. Calculus Concepts and Contexts, J. S. Stewart Calculus and Analytic Geometry, G. B. Thomas, R. L. Finney
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	2	50.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	50.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade	50.00	
Contribution of Final Exam to Success Grade	50.00	
Total	100.00	
Measurement and Evaluation Techniques Used in the Course		

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	3.00	42.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	2	7.00	14.00
Others	1	21.00	21.00
Final Exams	1	28.00	28.00
Total Work Load			175.00
Total work load/ 30 hr			5.83
ECTS Credit of the Course			6.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	4	1	0	5	0	0	5	0	0	0	0	4	0	0	0
ÖK2	5	5	3	0	3	0	0	2	0	0	0	0	2	0	0	0
ÖK3	5	5	5	0	5	0	0	4	0	0	0	0	4	0	0	0
ÖK4	4	3	1	0	4	0	0	3	0	0	0	0	2	0	0	0
ÖK5	5	5	5	0	5	0	0	4	0	0	0	0	4	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High