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:	Doç. Dr. HACER ÖZDEN AYNA	
15	Course Lecturers:	Matematik bölümünün tüm öğretim üyeleri	
16	Contact information of the Course Coordinator:	E-posta: hozden@uludag.edu.tr Telefon: +90 224 2941664 Adres: Bursa Uludağ Üniversitesi Fen-Edebiyat Fakültesi Matematik Bölümü 16059 Görükle-Bursa-TÜRKİYE	
17	Website:		
18	Objective of the Course:	is to give sufficient mathematics knowledge to solve engineering problems to students and also to improve the ability of finding solution to problems and analytical thinking.	
19	Contribution of the Course to Professional Development:	To give students the mathematical knowledge they will need in 4 years.	
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:	1-1-Matematik Cilt I, Çeviri Editörü Prof. Dr.İsmail Naci CANGÜL, Nobel Yayınevi, 2013 2-A First Course in Calculus, Serge Lang, World Student Series Third Edition, Addison-Wesley Publishing Company, ISBN:0-201-04148-0 3-Thomas Calculus, 11.Edition,Pearson Addison-Wesley Publishing Company -2005

23 Assesment

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		written exam

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	1	7.00	7.00
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	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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