

# CALCULUS I

1	Course Title:	CALCULUS I
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:	English
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. İSMAİL NACİ CANGÜL
15	Course Lecturers:	Matematik bölümünün tüm öğretim üyesi ve öğretim görevlileri
16	Contact information of the Course Coordinator:	E-posta: cangul@uludag.edu.tr Telefon: +90 224 2941756 Adres: 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:	
20	Learning Outcomes:	
	1	Calculates limit of functions
	2	Determines whether a function is continuous or not
	3	Knows the concept of derivative
	4	Learns the rules of calculating derivative
	5	Calculates derivative of functions
	6	Sketches graphs of functions
	7	Knows basic definitons and theorems of mathematics
	8	
	9	
	10	
21	Course Content:	
	<b>Course Content:</b>	
Week	Theoretical	Practice
1	Numbers,Functions.	Solving problems

<b>2</b>	Cartesian Plane, circle	Solving problems
<b>3</b>	Ellipse, parabola, hyperbola	Solving problems
<b>4</b>	The definition of limit and rules of limit, continuity	Solving problems
<b>5</b>	The definition of derivative and derivation rules, the geometrical application of derivative, implicit derivative.	Solving problems
<b>6</b>	Derivative of some special functions	Solving problems
<b>7</b>	Change problems.	Solving problems
<b>8</b>	Midterm exam and evaluation of midterm exam, repeat of previous subjects	Solving problems
<b>9</b>	Increasing and decreasing functions.	Solving problems
<b>10</b>	The main value Theorem and its applications	Solving problems
<b>11</b>	Convexity, concavity, Curve sketching.	Solving problems
<b>12</b>	The maximum and minimum problems, polar coordinates.	Solving problems
<b>13</b>	Inverse functions, Derivative of inverse functions.	Solving problems
<b>14</b>	The exponential and logarithm functions and their applications.	Solving problems

Activites			Number	Duration (hour)	Total Work Load (hour)
Theoretical			12	3.00	42.00
Practicals/Labs			14	2.00	28.00
Self study and preperation			4	2.00	28.00
Homeworks			0	0.00	0.00
Projects			0	0.00	0.00
Field Studies			0	0.00	0.00
Midterm exams	R		1	13.00	13.00
Others			14	4.00	56.00
Final Exams	0	0	0	13.00	13.00
Total Work Load					180.00
Total Exam load/ 30 hr	1	60.00			6.00
ECTS Credit of the Course					6.00
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					

Activities		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	3.00	42.00
Practicals/Labs		14	2.00	28.00
Self study and preperation		4	2.00	8.00
Homeworks		0	0.00	0.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		1	13.00	13.00
Others		14	4.00	56.00
Final Exams		0	13.00	13.00
Total Work Load				180.00
Final Exam load/ 30 hr		1	60.00	6.00
ECTS Credit of the Course				6.00
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				

		Weeks	Hours	Load (hour)
Theoretical		14	3.00	42.00
Practicals/Labs		14	2.00	28.00
Self study and preperation		4	2.00	28.00
Homeworks		0	0.00	0.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams	R	1	13.00	13.00
Others		14	4.00	56.00
Final Exams	0	0	13.00	13.00
Total Work Load				180.00
Total Exam load/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

Theoretical		Publishing Company -2005 3) Temel Matematik, Basri Celik, İsmail Naci Çançul, Nisa	3.00	42.00
Practicals/Labs		14	2.00	28.00
Self study and preparation		4) Genel Matematik, Mustafa Balci, Balci yayinlari, 2003. 5) Genel Matematik (Diferansiyel ve Integral Hesap),	2.00	28.00
Homeworks		0	0.00	0.00
Projects		2011	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams	R	1	13.00	13.00
Others		14	4.00	56.00
Quiz Exams	0	0.00	13.00	13.00
Total Work Load				180.00
Total Exam load/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

Theoretical			12	3.00	42.00
Practicals/Labs			14	2.00	28.00
Self study and preparation			4	2.00	8.00
Homeworks			0	0.00	0.00
Projects			0	0.00	0.00
Field Studies			0	0.00	0.00
Midterm exams	R		1	13.00	13.00
Others			14	4.00	56.00
Final Exams	0	0	0	13.00	13.00
Total Work Load					180.00
Total Exam load/ 30 hr	1	60	0		6.00
ECTS Credit of the Course					6.00
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					

		15	Temel Matematik, Başlı Celik, İsmail Naci Candolu, Nisa
Practicals/Labs		14	2.00
Self study and preperation		4	28.00
		14	5) Genel Matematik (Diferensiyel ve Integral Hesap), Mustafa Baırcı, Baırcı yayını, 2005.
Homeworks		0	0.00
Projects		0	0.00
Assesment		0	0.00
Field Studies		0	0.00
TERM LEARNING ACTIVITIES			
Midterm exams	R	1	13.00
Others		14	4.00
Final Exams	0	0	13.00
Total Work Load			180.00
Total Exam load/ 30 hr	1	60.00	6.00
ECTS Credit of the Course			6.00
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			

Practicals/Labs		4	14	2.00	28.00
Self study and preparation		4	14	2.00	28.00
Homeworks		0	0	0.00	0.00
Projects		0	0	0.00	0.00
Field Studies		0	0	0.00	0.00
Midterm exams		1	1	13.00	13.00
Others		14	14	4.00	56.00
Final Exams		0	0	13.00	13.00
Total Work Load					180.00
Total Exam load/ 30 hr		1	60.00		6.00
ECTS Credit of the Course					6.00
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					

Self study and preparation			14	Genel Matematik (Diferansiyel ve Integral Hesap),	28.00	28.00
Homeworks			0		0.00	0.00
Projects			0		0.00	0.00
Field Studies			0		0.00	0.00
Midterm exams	R		1		13.00	13.00
Others			14		4.00	56.00
Final Exams	0	0	0		13.00	13.00
Total Work Load						180.00
Total Exam load/ 30 hr	1	60.00				6.00
ECTS Credit of the Course						6.00
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						

Homeworks			0	0.00	0.00
Projects	2	0	0.00	0.00	
23. Assessment					
Field Studies			0	0.00	0.00
<del>TERM LEARNING ACTIVITIES</del>					
Midterm exams	R	1	13.00	13.00	
Others			14	4.00	56.00
Quiz Exams	0	0	13.00	13.00	
Total Work Load					180.00
Total Exam load/ 30 hr	1	60.00		6.00	
ECTS Credit of the Course					6.00
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					

TERM LEARNING ACTIVITIES			NUMBER OF TIMES	WEIGHT	POINTS
Projects	23	Assessment	0	0.00	0.00
Field Studies			0	0.00	0.00
Midterm exams		R	1	13.00	13.00
Others			14	4.00	56.00
Quiz Exams	0	0	00	13.00	13.00
Total Work Load					180.00
Total Exam load/ 30 hr	1	60.00			6.00
ECTS Credit of the Course					6.00
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					

Topic 23 - Assessment		0	0.00	0.00
Field Studies		0	0.00	0.00
TERM LEARNING ACTIVITIES	NUMBER	WEIGHT		
Midterm exams	1	13.00	13.00	
Others	14	4.00	56.00	
Final Exams	0	0.00	13.00	13.00
Total Work Load				180.00
Total Workload/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

Field Studies	0	0.00	0.00
<b>TERM LEARNING ACTIVITIES</b>	<b>NUMBER</b>	<b>WEIGHT</b>	<b>POINTS</b>
Midterm exams	1	13.00	13.00
Others	14	4.00	56.00
Final Exams	0	0.00	13.00
Total Work Load			180.00
Total Exam load/ 30 hr	1	60.00	6.00
ECTS Credit of the Course			6.00
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			

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT		
Midterm exams	R	1	13.00	13.00
Others		14	4.00	56.00
Final Exams	0	0.00	13.00	13.00
Total Work Load				180.00
Total Exam load/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

Others		14	4.00	56.00
Final Exams	0	0.00	13.00	13.00
Total Work Load				180.00
Total Exam Load/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

Others		14	4.00	38.00
Final Exams	0	0.00	13.00	13.00
Total Work Load				180.00
Total Workload/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

Final Exams	0	0.00	13.00	13.00
Total Work Load				180.00
Total Exam load/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

Total Work Load					180.00
Total Exam load/ 30 hr	1	60.00			6.00
ECTS Credit of the Course					6.00
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					

<b>Total Exam load/ 30 hr</b>	<b>1</b>	<b>60.00</b>		<b>6.00</b>
<b>ECTS Credit of the Course</b>				<b>6.00</b>
<b>Contribution of Term (Year) Learning Activities to Success Grade</b>		<b>40.00</b>		
<b>Contribution of Final Exam to Success Grade</b>		<b>60.00</b>		
<b>Total</b>		<b>100.00</b>		
<b>Measurement and Evaluation Techniques Used in the Course</b>				

Total workload/ 30 hr	1	60.00		6.00
ECTS Credit of the Course				6.00
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				

ECTS Credit of the Course			6.00
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			

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	

Contribution of Final Exam to Success Grade	60.00
Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	

Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	

Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	

Total	100.00
Measurement and Evaluation Techniques Used in the Course	

Measurement and Evaluation Techniques Used in the Course	
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Measurement and Evaluation Techniques Used in the Course
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24	ECTS / WORK LOAD TABLE
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25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
LO: Learning Objectives    PQ: Program Qualifications																

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
LO: Learning Objectives    PQ: Program Qualifications																

	QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
LO: Learning Objectives    PQ: Program Qualifications																

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
LO: Learning Objectives    PQ: Program Qualifications																

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
										0			3			
LO: Learning Objectives    PQ: Program Qualifications																

[illegible]

**LO: Learning Objectives    PQ: Program Qualifications**

<b>Contribution Level:</b>	<b>1 very low</b>	<b>2 low</b>	<b>3 Medium</b>	<b>4 High</b>	<b>5 Very High</b>
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