CALCULUS II (INTEGRAL CALCULATIONS)

1	Course Title:	CALCULUS II (INTEGRAL CALCULATIONS)
2	Course Code:	MAT1072
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	1
6	Semester:	2
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:	Matematik bölümünün tüm öğretim üyesi ve öğretim görevlileri
16	Contact information of the Course Coordinator:	E-posta: obizim@uludag.edu.tr Telefon: +90 224 2941757 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:	To develop the ability of students to think analytically and produce solutions to problems in their professional lives.
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	Integral and its 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	The indefinite integral and its properties.	Examples of the indefinite integral.
2	Methods of indefinite integral	Examples of the methods of indefinite integral.
3	Applications of indefinite integral	Examples of the applications of indefinite integral.
4	The definite integral and its properties	Examples of the definite integral
5	Riemann sums, Riemann integral and its properties	Examples of the Riemann sums and Riemann integral
6	The fundamental theorems of integral calculus	Examples of the the fundamental theorems of integral calculus
7	The methods of numerical integral	Examples of the methods of numerical integral
8	The improper integral and its properties	Examples of the improper integral.
9	The applications of definite integral and area	Examples of the applications of definite integral
10	The volumes and length of a plane curve	Examples of the volumes and length of a plane curve
11	The area of surface of revolution, moments and center of mass	Examples of the area of surface of revolution, moments and center of mass
12	The sequences, series and their properties	Examples of the sequences and series
13	Tests for convergence of series, alternating series	Examples of the tests for convergence of series
14	The power series and representation of functions by power series.	Examples of the The power series and representation of functions by power series

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.

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
ECTS Credit of the Course			6.00

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Quiz	0	0.00
Final Exam	1	50.00
Midterm exams	2	50.00
Contribution of Term (Year) Learning Activities to		
Contribution of Final Exam to Success Grade		50.00
Measurement and Evaluation Techniques Used in the		Measurement and evaluation are performed according to
		Undergraduate Education.

24	**ECTS / WORK LOAD TABLE**

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	5	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**