HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Calculus I				
CODE: MATH111	**SEMESTER:** FALL			
LANGUAGE: ENGLISH	**TYPE:** COMPULSORY			
PRE-REQUISITES:- **CO-REQUISITES:-**	**THEORY**	**PRACTICAL**	**CREDIT**	**ECTS**
WEEKLY HOURS:4	4	0	4	6

CONTENT OF THE COURSE:
Trigonometric, Exponential, Inverse and Logarithmic Functions. Limits. Continuity. Limits Involving Infinity. Derivative, ChainRule. Implicit Differentiation,. Extreme Values, First Derivative Test. Concavity, Curve Sketching. Integrals, Fundamental Theorem of Calculus. Substitution, Areas, Volumes, Integration by Parts. Trigonometric Integrals, Derivatives of Inverse Trigonometric Functions, Trigonometric Substitutions. Integral Techniques.

OBJECTIVE OF THE COURSE:
To learn the concepts and methods of differential and Integral calculus for functions of a real variable. To apply calculus to problems taken primarily from the physical and engineering sciences. The mathematical preparation for higher level mathematics and science courses. An understanding of the logical sequence of advanced mathematics.

WEEKLY SCHEDULE	
Week	**Topics**
1	Lines, Functions, Graphs
2	Trigonometric, Exponential, Inverse and Logarithmic Functions.
3	Limits
4	One Sided Limits, Continuity
5	Limits Involving Infinity
6	Derivative, Chain Rule
7	Implicit Differentiation, Derivatives of Inverse Trigonometric Functions
8	Midterm
9	Extreme Values, First Derivative Test
10	Concavity
11	Curve Sketching Integrals
12	Substitution, Integration by Parts
13	Areas
14	Volumes

TEXTBOOK:
Thomas, Weir, J. Hass, Thomas' Calculus Early Transcendentals, 13'th Edition, Pearson, 2014, ISBN10 0321884078
REFERENCE BOOKS:
R. Smith andR.Minton, Calculus, ISBN 978-0-07- 338311-8.

INSTRUCTOR(S):	Assoc. Prof. Dr. Ece Yetkin ÇELİKEL
FORM PREPARATION DATE:	25.11.2019

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
LO1	3	2	0	0	0	0	0	0	0	0	0
LO2	3	2	0	0	0	0	0	0	0	0	0
LO3	2	3	0	0	0	0	0	0	0	0	0
LO4	2	3	0	0	0	0	0	0	0	0	0
LO5	3	2	0	0	0	0	0	0	0	0	0
	PO: Program Outcomes | LO: Learning Outcomes Values: 0: None | 1: Low | 2: Medium | 3: High										

LEARNING OUTCOMES OF THE COURSE:
LO1: A comprehension of mathematics (algebra, differential, integration …) and fundamentals of science **LO2:**Ability to apply knowledge of mathematics, science and engineering to problems in electronics engineering. **LO3:**Ability to recognize the needs and challenges of ourage and to assess the global and social impact of engineering solutions **LO4:**Ability to identify, formulate and solve engineering problems. **LO5:**Ability to effectively communicate knowledge and opinions via written, oral visual means.

CONTRIBUTION OF THE COURSE TO VOCATIONAL EDUCATION
With the help of this course, students gain basic knowledge of fundamental mathematics to solve problems involving engineering mathematics and formulas.