

Course Title-Course Code: EBE 512 MATHEMATICAL METHODS IN ELECTRONICS II							Name of the Programme: ELECTRONICS AND COMPUTER EDUCATION		
Semester	Teaching Methods							Credits	
	Lecture	Recite	Lab.	Project	Homework	Other	Total	Credit	ECTS Credit
3	42				52	93	187	3	7,5
Language	Turkish								
Compulsory / Elective	Elective								
Prerequisites	-								
Course Contents	Integration of multivariable functions, Applications on the polar, cylindrical and spherical coordinates, Jacobian. Important concepts, theorems, results and techniques of ordinary differential equations. Convolution Application of the laplace transform to boundary value problems, linear differential equations and integro-differential equations. Serial solution of the second order differential equations in the vicinity of ordinary and regular singular points. Some topics in partial differential equations.								
Course Objectives	To upgrade research background of students by giving some necessary mathematical basics about Electronics.								
Learning Outcomes and Competences	<ul style="list-style-type: none"> To learn some notions about several variables functions and differential equations. 								
Textbook and /or References	<ol style="list-style-type: none"> Bernard Kolman, David R. Hill, Uygulamalı Lineer Cebir, Palme Yayıncılık, Ankara, 2002. (7. Baskıdan Çeviri, Çeviri Editörü: Prof. Dr. Ömer AKIN) Hüseyin Halilov, Diferensiyel Denklemler ve Lineer Cebirin Elemanları, Literatür Yayınları, İstanbul, 2003. Serge Lang, Calculus of Several Variables, Second Edition, Addison-Wesley Publishing Company, 1979. Hüseyin Halilov, Alemdar Hasanoğlu, Mehmet Can, Yüksek Matematik 2, Literatür Yayınları, İstanbul, 2001. Robert L. Barrelli, Courtney s. Coleman, Differential Equations Amodelling Perspective, John Wiley&Sons,1998. Ahmet H. Kayran, Sayısal İşaret İşleme, İstanbul Teknik Üniversitesi, 1990. 								
Assessment Criteria								<i>If any,mark as (X)</i>	Percent (%)
	Midterm Exams							x	30
	Quizzes								
	Homeworks							x	20
	Projects								
	Term Paper								
	Laboratory Work								
	Other								
	Final Exam							x	50
Instructors	Assist. Prof. Dr. Nurettin DOĞAN								
Week	Subject								

1	Integration of Multivariable Functions
2	Some Applications to polar, cylindrical and spherical coordinate.
3	Jacobian. Important concepts, theorems, results and techniques of ordinary differential equations
4	Convolution Application of the laplace transform to boundary value problems, linear differential equations and integro-differential equations.
5	Convolution Application of the laplace transform to boundary value problems, linear differential equations and integro-differential equations.
6	Series solution of the second order differential equations in the vicinity of ordinary and regular singular points.
7	Series solution of the second order differential equations in the vicinity of ordinary and regular singular points.
8	Partial Differential Equations. Basic concepts.
9	Classifications of Partial Differential Equations.
10	Obtaining partial differential equations.
11	First order linear partial differential equations.
12	First order semi-linear partial differential equations.
13	First order semi-linear partial differential equations.
14	Solution of initial value problem.