



ESOGÜ Mathematics - Computer Department
COURSE INFORMATION FORM

SEMESTER Spring

COURSE CODE	821615005	COURSE NAME	Partial Differential Equations
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			LANGUAGE
	Theory	Practice	Labratory	Credit	ECTS	TYPE	
5	3	0	0	3	5	COMPULSORY () ELECTIVE (x)	Turkish

COURSE CATAGORY

Mathematics	Computer		Social Science
x			

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (.....)		
FINAL EXAM		1	60

PREREQUIEITE(S)

None.

COURSE DESCRIPTION

An Introduction to Partial Differential Equations(PDEs), Classification of PDEs, Getting PDEs. ,tangent plane, First order linear and quasi-linear PDEs, Langrange's method, Pfaff equations, Charpit's method, solvable systems, Second order PDEs and their classification.

COURSE OBJECTIVES

The main of the course to explain and to solve the problems that appear in mathematical modelling of a lot of physical , chemical and biological formations.

ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION

Gain the ability of problem solution.

COURSE OUTCOMES

Our aims are to determine some PDEs , directly or indirectly which we can face with, in various fields , to give fundamental solution method and to inform about its mathematical theory.

TEXTBOOK

M.Çağlayan, O.Çelebi, Kısmi Diferensiyel Denklemler

OTHER REFERENCES

1- K.Koca , Kısmi Türevli Denklemler.
2-,M.N.Özer, Kısmi Türevli Diferensiyel Denklemler ve Çözümlü Problemler Ders Notları
3- F.H. Miller, Partial Diff. Equations

TOOLS AND EQUIPMENTS REQUIRED

None.

COURSE SYLLABUS

WEEK	TOPICS
1	An Introduction to PDEs, Classification,,
2	Getting PDEs
3	Tangent plane
4	Three variables first order,systems
5	First order quasi-linear PDEs
6	First order semilinear PDEs, General Solution
7	First order general PDEs..
8	Midterm
9	Solvable equations,
10	Exact integral
11	Getting second order PDEs,
12	Second order linear PDEs
13	Second order PDEs with variable coefficient
14	Second order quasi-linear PDEs, Classification
15	Applications of second order PDEs
16	Final

NO	PROGRAM OUTCOMES	3	2	1
1	The ability to apply knowledges of Mathematics - Computer,	x		
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,		x	
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,	x		
4	The skill to solve and design a problem process in accordance with a defined target,	x		
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,		x	
6	The skill to use the modern techniques and computational tools needed for mathematical applications,		x	
7	The skill to make team work within the discipline and interdisciplinary,	x		
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics - Computer,		x	
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,	x		
10	The skill to have professional and ethical responsibility,		x	
11	The skill to have consciousness for quality issues and scientific research,		x	
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,		x	
13	Ability to solve problems in the working life faced to find an appropriate algorithms via mathematical modeling and to write computer programs,	x		
14	The skill to developed design of software systems at different complex levels,			x
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.		x	

1:None. 2:Partially contribution. 3: Completely contribution.

Instructor(s): Prof. Dr. Filiz Taşcan

Signature:

Date: