



Kırıkkale University

GRADUATE SCHOOL OF NATURAL APPLIED SCIENCES
Mathematics (Master) (With Thesis)

MAT8033 Partial Differential Equations-1					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
1	MAT8033	Partial Differential Equations-1	3	3	7

Mode of Delivery:

Face to Face

Language of Instruction:

Türkisch

Level of Course Unit:

Master's Degree

Work Placement(s):

No

Department / Program:

Mathematics (Master) (With Thesis)

Type of Course Unit:

Elective

Objectives of the Course:

The aim is to consider partial differential equations

Teaching Methods and Techniques:

Application higher order of advanced partial differential equations

Prerequisites and co-requisites:**Course Coordinator:****Name of Lecturers:**

Prof. Dr. Ali OLGUN

Assistants:**Recommended or Required Reading**

Resources Partial Differential Equations, Eutiquio C. young, Introduction to Partial Differential Equations and Boundary value problems, Rene Denemeyer .1968, Partial Differential Eq Lecturer Notes

Course Category

Mathematics and Basic Sciences	: 60	Education	:
Engineering	: 40	Science	:
Engineering Design	:	Health	:
Social Sciences	:	Field	:

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	The fundamental concepts		
2	Cauchy–Kowalevski theorem		
3	Cauchy–Kowalevski theorem		
4	Cauchy–Kowalevski theorem		
5	Classification of the second order partial differential equations		
6	Classification of the second order partial differential equations		
7	Canonical forms of partial differential equations		
8	Midterm Exam		
9	Hyperbolic partial differential equations		
10	Cauchy problem, Riemann method		
11	Cauchy problem, Riemann method		
12	Cauchy problem, Riemann method		
13	Goursat problem		
14	Methods of successive approximation		
15	Methods of successive approximation		

Course Learning Outcomes

No	Learning Outcomes
C01	recognize and solve partial differential equation
C02	classifying and solving partial differential equations
C03	learn and solve canonical forms of partial differential equations
C04	Cauchy learns the problem and makes the solution
C05	Learns the Riemann method and applies it to the problem
C06	Learns the Goursat problem and applies it to the problem
C07	Learns the method of sequential approximations

Program Learning Outcomes

No	Learning Outcome
P03	Define a problem and propose a solution for it, and to solve the problem, evaluate the results and apply them if it is necessary in his/her areas of expertise.
P08	Produce solution and to take responsibility and to develop new strategic approaches in situations which are not predicted in his/her areas of expertise.
P04	Transfer systematically the current developments, his/her studies to other people as verbal or written form confidently.
P09	Follow scientific, social, and ethical values and to teach and to control them in the step of data collection, evaluation and announcement of them.
P05	Develop new strategic approach and produce solutions by taking responsibility in unexpected and complicated situations in his/her area of practice.
P01	Evaluate the fundamental notions, theories and data with academic methods. Determining and analyzing the encountered problems and subjects, exchanging of ideas, improving suggestions prop
P10	Apply the digested knowledge and problem solving ability in the collaborations between different groups.
P02	Expand knowledge by scientific methods and use them with scientific, social and ethical responsibility.
P07	Have oral or written communication ability in one of the common foreign languages ("European Language Portfolio Global Scale", Level B2).
P06	Develop strategic, political and practice plans and evaluate the results by considering the quality process in his/her area of expertise.

Assessment Methods and Criteria		
In-Term Studies	Quantity	Percentage
Mid-terms	1	%40
Quizzes	0	%0
Assignment	0	%0
Attendance	0	%0
Practice	0	%0
Project	0	%0
Final examination	1	%60
Total		%100

ECTS Allocated Based on Student Workload			
Activities	Quantity	Duration	Total Work Load
Course Duration	16	3	48
Hours for off-the-c.r.stud	16	3	48
Assignments	3	15	45
Presentation	1	20	20
Mid-terms	1	20	20
Practice	0	0	0
Laboratory	0	0	0
Project	0	0	0
Final examination	1	30	30
Total Work Load			211
ECTS Credit of the Course			7

Contribution of Learning Outcomes to Programme Outcomes											
bbb											
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	

All	4	5	4	4	3	3	2	3	3	4	
C01	4	4	4	4	4	4	4	4	4	4	
C02	4	3	4	3	5	5	3	4	4	4	
C03	4	5	4	3	4	4	4	5	4	5	
C04	4	4	4	5	3	4	4	5	4	4	
C05	5	3	4	4	4	4	5	5	4	3	
C06	3	4	4	4	5	4	3	4	3	4	
C07	4	4	4	3	4	3	5	4	4	4	

Kırıkkale Üniversitesi