Kırıkkale University

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

MAT8034	Partial Differential Equations-2				
Semester	**Course Unit Code**	**Course Unit Title**	**L+P**	**Credit**	**Number of ECTS Credits**
2	MAT8034	Partial Differential Equations-2	3	3	7

Mode of Delivery:
Face to Face
Language of Instruction:
Türkish
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-requisities:

Course Coordinator:

Name of Lecturers:
Prof.Dr. Ali OLGUN
Assistants:

Recommended or Required Reading

Resources Partial Differential Equations, Mehmet Çağlayan, Okay Çelebi , Partial Differential Equations, Eutiquio C. young, Introduction to Partial Differential Equations and Boundary Lecturer Notes

Course Category

Mathmatics 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	Recall and apply the concept of directed derivative
C02	Apply the Green Theorem, divergence Theorem
C03	Learns Konormal derivatives
C04	Learns the boundary value problems for Elliptic equations and makes solutions
C05	Harnack learns and applies inequalities

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 propp
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.

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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

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	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10
All	4	5	4	4	3	3	2	3	3	4

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