



Kırıkkale University

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

MAT8028 Advanced Differential Geometry-2					
Semester	Course Unit Code	Course Unit Title	L+P	Credit	Number of ECTS Credits
2	MAT8028	Advanced Differential Geometry-2	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 Advanced Differential Geometry-II course aims to give the forming fundamental knowledge for the studies of graduate students who study at metric geometry branch.

Teaching Methods and Techniques:Eğrilikler, Riemann manifoldlarının altmanifoldları, E^n de Hiperyüzeyler ve E^3 de yüzeyler**Prerequisites and co-requisites:****Course Coordinator:****Name of Lecturers:**

Prof. Dr. Mehmet Yıldırım

Assistants:**Recommended or Required Reading**

Resources H. Hilmi Hacısalihoğlu ve N. Ekmekçi, Tensör Geometri, Hacısalihoğlu Yayınları, Ankara, 2003.",3. H. Hilmi Hacısalihoğlu, Lineer Cebir I-II, Seçkin Yayıncılık, Ankara, 2

4 ödev

1 arasınav 1 yarıyıl sonu sınavı

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	Curvatures		
2	Sectional curvature		
3	Ricci curvature and scalar curvatures		
4	Submanifolds of Riemannian manifolds		
5	Second fundamental form		
6	Fundamental equations		
7	Induced metric and induced connection		
8	Midterm Exam		
9	Some special submanifolds		
10	Hypersurfaces in E^n		
11	Gauss mapping and shape operator		
12	Algebraic invariants of shape operator		
13	Euler theorem for Hypersurfaces and its results		
14	Examples of Hypersurface		
15	Surfaces in E^3		

Course Learning Outcomes

No	Learning Outcomes
C01	He/she learns the notion of curvature on Riemannian manifolds
C02	He/she learns submanifolds of Riemannian manifolds
C03	He/she knows characterization of submanifolds

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.

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	5	4	5	5	4	4	3	2	3	5	
C01	5	4	5	5	4	4	3	2	3	5	
C02	5	4	5	5	4	4	3	2	3	5	
C03	5	4	5	5	4	4	3	2	3	5	

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