Kırıkkale University

FACULTY OF ARTS AND SCIENCES
MATHEMATICS

MAT3002	Complex Analysis 2				
Semester	**Course Unit Code**	**Course Unit Title**	**L+P**	**Credit**	**Number of ECTS Credits**
6	MAT3002	Complex Analysis 2	4	4	6

Mode of Delivery:
Face to Face
Language of Instruction:
Türkish
Level of Course Unit:
Bachelor's Degree
Work Placement(s):
No
Department / Program:
MATHEMATICS
Type of Course Unit:
Required
Objectives of the Course:
To give a perspective on the topics of Integrations on complex plane,Complex power series, Taylor and Laurent series,Classification of the singular points and Residue theorem, Calculation of some real integrals with complex methods,The Argument principle
Teaching Methods and Techniques:
Integration on complex plane, Complex power series, Taylor and Laurent series, classification of the singular points and Residue theorem, Calculation of some real integrals with complex methods,The Argument principle
Prerequisites and co-requisities:

Course Coordinator:

Name of Lecturers:
Associate Prof.Dr. Didem AYDIN ARI
Assistants:

Recommended or Required Reading

Resources

Turgut BAŞKAN, Kompleks Fonksiyonlar Teorisi, Uludağ Üni. Yay., 1996 , Bursa
Lecture, Question-Answer, Discussion, Drilland Practice, Simulation, Problem Solving
Churchill, R.V.,James W.B., Roger F.V., Compleks variables and applications, MaGrav-Hill,1990, N.Y.Başarır, Metin, Kompleks Değişkenli Fonksiyonlar Teorisi, Sakarya Kital

1yarıyıl sonu (mid term exam) ,1 dönem sonu sınav (final exam)

Course Category

Mathmatics and Basic Sciences	:	100	**Education**	:	
Engineering	:		**Science**	:	
Engineering Design	:		**Health**	:	
Social Sciences	:		**Field**	:	

Weekly Detailed Course Contents

Week	Topics	Study Materials	Materials
1	Integrations of complex valued functions		
2	Contours and contours integral		
3	Cauchy integral theorem		
4	Corollories of the Cauchy theorem		
5	Complex power series		
6	Sequence and series of functions and uniform convergence		
7	Complex Taylor and Mac-Laurin series		
8	Mid term exam		
9	Laurent series		
10	Classification of the singular points		
11	Calculation of Residue		
12	Residue theorem		
13	Calculation of some real integrals with complex methods		
14	The Argument principle, To calculate the series summation with residue theorem		
15	Solving questions		

Course Learning Outcomes

No	Learning Outcomes
C01	Fonksiyonların analitik olduğu ve olmadığı noktalar civarında seri açılımlarını hesaplar.
	Singüler noktaları sınıflandırır.

Program Learning Outcomes

No	Learning Outcome
P09	Independently carries out research in the field of Mathematical Sciences.
P08	Uses the ability of abstract thinking.
P07	Solves numerical, algebraic, geometric and spatial expressions, equations, functions and problems.
P12	Develops new ideas in the field of Mathematical Sciences.
P11	Updates their current knowledge in the field of Mathematical Sciences.
P10	Critically evaluates the knowledge and skills acquired in the field.
P03	Advanced undergraduate subjects will have the qualifications to carry out the work independently in partnership.
P02	The fundamental notions, theories and data, evaluating scientific methods, identify and analyze problems and issues encountered in discussions, makes recommendations based on research eviden
P01	Based on efficiencies gained by using materials related to mathematics in secondary education, is equipped with advanced knowledge.
P06	Interprets abstract mathematical concepts, including rings and abstract algebra, and critical reasoning.
P05	Interprets mathematical and statistical models such as formulas, functions, graphs, tables, and schematics.
P04	Can express mathematical information numerically, symbolically, graphically, verbally, and visually.

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	15	4	60
Hours for off-the-c.r.stud	15	5	75
Assignments	3	10	30
Presentation	0	0	0
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			**215**
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	P11	P12
All	3	5	4	4	4	2	3	3	4	5	5	5
C01	3	5	4	4	4	2	3	3	4	5	5	5