



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Real and Complex Analysis II							
Course Code		MTK502		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		This course aims to acquaint students with the fundamental notions of Real and Complex analysis including Fourier transforms, elementary properties of Holomorphic functions, Harmonic functions, the maximum modulus principle, approximation by rational functions, conformal mapping, zeros of holomorphic functions.							
Course Content		Fourier transforms, elementary properties of Holomorphic functions, Harmonic functions, the maximum modulus principle, approximation by rational functions, conformal mapping, zeros of holomorphic functions.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Assignment	1	20

Recommended or Required Reading

1	Real and Complex Analysis, Walter Rudin, 1987.
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Week	Weekly Detailed Course Contents	
1	Theoretical	Fourier transforms
	Preparation Work	Relevant part of course book should be read.
2	Theoretical	Fourier transforms
	Preparation Work	Relevant part of course book should be read.
3	Theoretical	Fourier transforms
	Preparation Work	Relevant part of course book should be read.
4	Theoretical	Elementary properties of Holomorphic functions
	Preparation Work	Relevant part of course book should be read.
5	Theoretical	Elementary properties of Holomorphic functions
	Preparation Work	Relevant part of course book should be read.
6	Theoretical	Harmonic functions
	Preparation Work	Relevant part of course book should be read.
7	Theoretical	Harmonic functions
	Preparation Work	Relevant part of course book should be read.
8	Theoretical	The maximum modulus principle
	Preparation Work	Relevant part of course book should be read.
9	Theoretical	The maximum modulus principle
	Preparation Work	Relevant part of course book should be read.
10	Intermediate Exam	Midterm Exam
11	Theoretical	Approximation by rational functions
	Preparation Work	Relevant part of course book should be read.
12	Theoretical	Approximation by rational functions
	Preparation Work	Relevant part of course book should be read.
13	Theoretical	Conformal mapping, zeros of holomorphic functions
	Preparation Work	Relevant part of course book should be read.
14	Theoretical	Conformal mapping, zeros of holomorphic functions
	Preparation Work	Relevant part of course book should be read.



15	Theoretical	Conformal mapping, zeros of holomorphic functions
	Preparation Work	Relevant part of course book should be read.
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	1	20	2	22
Midterm Examination	1	40	2	42
Final Examination	1	50	2	52
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to comprehend the basic concept of real and complex analysis.
2	To be able to develop mathematical sense
3	To be able to develop the capacity of posing and solving problems
4	To be able to use mathematical concepts in solving certain types of problems
5	To be able to gain the skill of interpreting some interrelations among these concepts

Programme Outcomes (Mathematics Master)

1	To be able to have an adequate theoretical and practical domain knowledge.
2	To be able to comprehend the interdisciplinary interaction associated with Mathematics.
3	To be able to use theoretical and practical domain knowledge gained in the field of Mathematics.
4	To be able to interpret knowledge from different disciplines integrating knowledge in the field of mathematics and produce new information.
5	To be able to define, analyse, model and to solve the problems by scientific methods in Mathematics.
6	To be able to conduct a math related specialistic study independently.
7	To be able to develop new strategic approaches to solve problems occurred in unforeseen and complex math-related applications by taking responsibility.
8	To be able to lead in situations that require solving problems related to the mathematics.
9	To be able to criticize his/her knowledge and skills acquired in the field mathematics.
10	To be able to transfer his/her ideas and suggestions for solutions to problems by supporting quantitative or qualitative data verbally and in writing.
11	To be able to communicate both orally and written in a foreign language.
12	To be able to use computer hardware and information technologies with software required by Mathematics.
13	To be able to contribute to the solution of the social, scientific, cultural and ethical problems related to the Mathematics, and being able to support the development of social, scientific, cultural and ethical values.
14	To be able to develop mathematics-related strategies, policies and operational plans, and to evaluate the results obtained within the framework of quality processes.
15	To be able to use his/her knowledge in the field of mathematics and practical problem-solving skills in interdisciplinary studies.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	5	5		4	4
P3	4	4	4	4	4
P5			4		
P7	4	4			
P13		2	2	2	2

