COMPLEX FUNCTIONS THEORY II

1	Course Title:	COMPLEX FUNCTIONS THEORY II
2	Course Code:	MAT3012
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	6
7	ECTS Credits Allocated:	7.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. SİBEL YALÇIN TOKGÖZ
15	Course Lecturers:	Analiz ve Fonksiyonlar Teorisi Anabilim Dalı öğretim üyeleri
16	Contact information of the Course Coordinator:	Bursa Uludağ Üniversitesi, Fen Edebiyat Fakültesi, Matematik Bölümü, Bursa 224 294 17 51 tekcan@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of the course is to make the students gain the theory of complex functions from the rest of the fall semester at the undergraduate leve. The goals is to teach the sequences and series of complex functions, singularities, residues and it's aplications. Also to learn to calculate the some real integrals.
19	Contribution of the Course to Professional Development:	To help the learn informations on complex function theory 2.
20	Learning Outcomes:	

	1	Learn the compeks numbers
	2	Learn the complex valued sequence and series
	3	Learn the uniform convergence of complex valued sequence and series
	4	Learn the power series and their convergences radius and convergences ball
	5	Learn the Taylor and Laurent series expansion
	6	Learn the classification of singularities and calculaiton of these singularities
	7	Learn the Residue theorem and its applications
	8	Learn the evaluate of some real integrals by means of residue theorem
	9	Learn the number of zeros and poles of analytic functions
	10	

21	Course Content:	

Course Content:		
Week	Theoretical	Practice
1	Complex numbers and their geometric view	Solving questions related to subject

2	Complex valued sequence and some properties of these sequences and their convergence	Solving questions related to subject
3	Complex valued series and partition sums of these seres, convergences of these series	Solving questions related to subject
4	Function sequences, uniform and absolute convergences of these sequences	Solving questions related to subject
5	Function series, and uniform and absolute convergences of these sequences. Weierstrass M-test	Solving questions related to subject
6	Power series and their convergences radius and convergences ball	Solving questions related to subject
7	Power series and their convergences radius and convergences ball	Solving questions related to subject
8	Taylor series expansions	Solving questions related to subject
9	Laurent series expansions at singular points	Solving questions related to subject
10	Laurent series expansions in ring domain	Solving questions related to subject
11	Classification of singularities, removable singularities, pole and simple pole and essential sigularities	Solving questions related to subject
12	Residue theorem and its applications	Solving questions related to subject
13	Evaluate of some real integrals by means of residue theorem	Solving questions related to subject

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	13	5.00	65.00
Homeworks	12	3.00	36.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	0	0.00	0.00
Final Exams	1	28.00	28.00
Total Work Load			235.00
Total work load/ 30 hr			7.00
ECTS Credit of the Course			7.00

Materials:
Dora Yayınevi, Bursa, 2012
[2] H. S. KASANA, Complex Variables, Prentice-Hall
[3] J. H. MATHEWS ve R.W. HOWELL. Complex Analysis, Jones and Bartlett, 1997

Assesment	K		
Midterm Exam	1	40.00	
Quiz	0	0.00	
Home work-project	0	0.00	
Final Exam	1	60.00	
Total	2	100.00	

Contribution of Term (Year) Learning Activities to Success Grade	40.00
Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	The system of relative evaluation is applied.

24	**ECTS / WORK LOAD TABLE**

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	3	4	4	5	2	2	3	3	2	3	2	3	3	4	4	2

ÖK2	4	2	2	3	4	2	3	3	4	2	3	5	3	4	2	4
ÖK3	2	4	3	2	2	4	2	3	4	2	4	5	2	3	3	2
ÖK4	2	2	2	3	3	4	3	2	4	3	2	4	2	3	2	3
ÖK5	2	3	3	4	3	2	4	4	2	3	3	2	4	2	2	3
ÖK6	3	2	3	3	3	4	3	3	4	4	3	3	4	2	2	2
ÖK7	3	4	2	3	2	4	2	3	3	3	4	4	5	2	4	3
ÖK8	2	3	4	5	3	3	3	3	3	3	3	3	3	3	3	3
ÖK9	3	4	3	3	3	4	3	2	4	3	3	2	5	4	5	4

LO: Learning Objectives   PQ: Program Qualifications

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High