COMPLEX ANALYSIS I

1	Course Title:	COMPLEX ANALYSIS I	
2	Course Code:	MAT5105	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	none	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. OSMAN BİZİM	
15	Course Lecturers:	Prof.Dr.Betül Gezer	
16	Contact information of the Course Coordinator:	obizim@uludag.edu.tr, 0224 2941757 B.U.Ü. Fen-Ed. Fak. Matematik Bölümü, Görükle/BURSA	
17	Website:		
18	Objective of the Course:	To teach analytical functions, Global Cauchy theorem and the results, the series of analytic functions, normal families, meromorphic functions, residue theorem and its consequences.	
19	Contribution of the Course to Professional Development:	Students have the necessary equipment about abstract algebra courses in graduate education.	
20	Learning Outcomes:		
		1	He/she interprets the analitic functions.
		2	He/she interprets complex integral
		3	He/she interprets the complex sequences and series.
		4	He/she estimates place the zero.
		5	He/she Finds the largest and smallest values of the functions modules.
		6	He/she interprets the principle of the argument
		7	He/she wins Theoretical thinking skill .
		8	
		9	
		10	
21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Analytic functions	
2	Cauchy's theorem	

3	Global Cauchy theorems	
4	The results of Cauchy's theorem	
5	Branches of logarithm and power function	
6	Sequences and series of analytic functions	
7	Taylor and Laurent series	
8	Normal families	
9	Zeros of analytic functions	
10	Singularities	
11	Residue theorem and its consequences	
12	The argument principle, Rouche and Hurwitz theorems	
13	Extended complex plane	
14	Meromorf functions	

22	Textbooks, References and/or Other Materials:	B.P. PALKA: An Introduction to Complex Function Theory, Springer-Verlag,1991. J. H. MATHEWS & R.W.HOWELL: Complex Analysis, Jones and Bartlett Pub. 1997.

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	5.00	70.00
Homeworks	1	60.00	60.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	1	4.00	4.00
Final Exams	1	10.00	10.00
Total Work Load			186.00
Total work load/ 30 hr			6.20
ECTS Credit of the Course			6.00

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	1	2	1	3	2	1	2	3	4	2	0	0	0	0	0	0
ÖK2	2	2	3	1	3	2	1	3	2	1	0	0	0	0	0	0
ÖK3	3	1	2	2	1	3	1	2	3	2	0	0	0	0	0	0
ÖK4	1	1	3	3	2	1	3	2	1	3	0	0	0	0	0	0

ÖK5	2	3	2	1	2	4	2	2	2	2	0	0	0	0	0	0
ÖK6	2	1	2	2	3	2	3	1	2	2	0	0	0	0	0	0
ÖK7	1	2	3	3	2	2	1	3	1	3	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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