ANALYTIC NUMBER THEROY

1	Course Title:	ANALYTIC NUMBER THEROY	
2	Course Code:	MAT3052	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	3	
6	Semester:	6	
7	ECTS Credits Allocated:	5.00	
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. İSMAİL NACİ CANGÜL	
15	Course Lecturers:	Doç. Dr. Ahmet TEKCAN, Yrd. Doç. Dr. Musa DEMİRCİ, Yrd. Doç. Dr. Hacer ÖZDEN	
16	Contact information of the Course Coordinator:	cangul@uludag.edu.tr, 0224 2941756, Fen-Edebiyat Fakültesi, Matematik Bölümü, 16059, Görükle / Bursa	
17	Website:	http://www.ismailnacicangul.com/	
18	Objective of the Course:	To obtain results concerning the distribution of prime numbers and to make an introduction to analytic numbers	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Can define prime numbers and state the known results on their distribution
		2	Can establish relations between aritmetic functions
		3	Can apply the theorems on the distribution of prime numbers
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Prime number theorem	
2	Results of the prime number theorem	
3	The analytic proof of prime number theorem	
4	Fundamental theorem of arithmetic	

5	Arithmetic functions	
6	Dirichlet Product of Arithmetic functions	
7	Mobious inversion Formula	
8	Applications of Mobious inversion Formula	
9	Relations between aritmetic functions	
10	Primitive roots	
11	Quadratic reciprocity law	
12	Legendre symbol	
13	Quadratic congruences	
14	Riemann-Zeta function	

22	Textbooks, References and/or Other Materials:	1. Tom M. Apostol, Introduction to Analytic Number Theory, Springer, 2000 2. Kiran Sridhara Kedlaya, Analytic Number Theory, (Ders notları) MIT, 2006 3. Paul T. Bateman and Harold G. Diamond, Analytic Number Theory an Introductory Course, world Scientific, 2009
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	2	50.00
Final Exam	1	50.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24	**ECTS / WORK LOAD TABLE**

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	4.00	56.00
Homeworks	2	20.00	40.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	15.00	15.00
Total Work Load			153.00
Total work load/ 30 hr			5.10
ECTS Credit of the Course			5.00

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	5	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
ÖK2	0	4	0	0	5	0	0	3	0	0	0	0	0	0	0	0
ÖK3	0	4	0	0	5	0	3	3	0	0	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