NUMBER THEORY I									
1	Course Title:	NUMBER	R THEORY I						
2	Course Code:	MAT5203							
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 f	ace						
14	Course Coordinator:	Prof. Dr. İSMAİL NACİ CANGÜL							
15	Course Lecturers:	Prof.Dr.İsmail Naci CANGÜL Prof.Dr.Osman BİZİM							
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi, Fen-Edebiyat Fakültesi Matematik Bölümü, 16059 Görükle Bursa-TÜRKİYE 0 224 294 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 some algebraic properties on number theory							
19	Contribution of the Course to Professional Development:								
20	Learning Outcomes:								
		1	Learn the some fundamental concepts on number theory.						
		2	Learn the finite fields and algebra on these fields.						
		3	Learn the Legendre symbol and the relationship between quadratic congruencies and Legendre symbol.						
		4	Learn the Gauss sums and some properties of this sum.						
		5	Learn the find the simple continued fraction expansion of rational and irrational numbers.						
		6							
		7							
		8							
		9							
		10							
21									
107	Course Content:								
	Theoretical		Practice						
1	Overview of basic concepts on lesso								
2	Algebraic numbers, algebraic groups reduction theorems								
3	Finite fields and algebraic operations	on them							

4	Prime numbers and the number of pr	rime						
	numbers							
5	Legendre symbol and the relationship between quadratic congruencies and Legendre symbol							
6	Ring of Gauss integers							
7	Gauss primes, Galois groups and su	ms						
8	Rings and units of rings							
9	The relationship between units of ring the integer solutions of Pell equations							
10	Farey sequences							
11	Quadratic forms and their relationship between the groups GL(2,Z) and SL(
12	Positive definite and indefinite quadra forms	atic						
13	Minkowski theorem and its application	n						
14	The ring Z[exp(2pi/ n)]							
22	Textbooks, References and/or Other Materials:		 [1] J. Buchmann and U. Vollmer. Binary Quadratic Forms: An Algorithmic Approach. Springer-Verlag, Berlin, Heidelberg, 2007. [2] D.A. Buell. Binary Quadratic Forms, Clasical Theory and Modern Computations. Springer-Verlag, New York, 1989. [3] H.M. Edward. Fermat's Last Theorem: A Genetic Introduction to Algebraic Number Theory. Graduate Texts in Mathematics, vol. 50, Springer-Verlag, 1977. [4] D.E. Flath. Introduction to Number Theory. Wiley, 1989. [5] R.A. Mollin. Quadratics. CRS Press, Boca Raton, New York, London, Tokyo, 1996. [6] R.A. Mollin. Fundamental Number Theory with Applications. Chapman&Hall/ CRC, 2008 					
23	Assesment							
TERM L	LEARNING ACTIVITIES	NUMBE R	WEIGHT					
Midterr	m Exam	0	0.00					
Quiz		0	0.00					
Home work-project 0			0.00					
Final E	xam	1	100.00					
Total		1	100.00					
1		'	100.00					
	oution of Term (Year) Learning Activitions Grade	<u> </u>	0.00					
Succes		es to						
Succes	ss Grade	es to	0.00					
Succes Contrib Total	ss Grade oution of Final Exam to Success Grade rement and Evaluation Techniques Us	es to	0.00 100.00 100.00					
Succes Contrib Total Measu	ss Grade oution of Final Exam to Success Grade rement and Evaluation Techniques Us	es to	0.00 100.00 100.00					

Activites		Number	Duration (ho	ur) Total Work Load (hour)					
Theoretical		14	3.00	42.00					
Practicals/L	abs	0	0.00	0.00					
Self study a	and preperation	14	7.00	98.00					
Homeworks	3	0	0.00	0.00					
Projects		14	5.00	70.00					
Field Studie	es	0	0.00	0.00					
Midterm ex	ams	0	0.00	0.00					
Others		0	0.00	0.00					
Final Exam	s	1	15.00	15.00					
Total Work	Load			225.00					
Total work I	oad/ 30 hr								
ECTS Cred	it of the Course			6.00					
25	25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS								

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	5	4	2	4	3	3	5	5	5	3	0	0	0	0	0	0
ÖK2	4	3	2	4	3	2	5	5	4	4	0	0	0	0	0	0
ÖK3	5	4	2	4	4	4	4	5	5	4	0	0	0	0	0	0
ÖK4	4	3	2	4	3	2	5	5	4	3	0	0	0	0	0	0
ÖK5	5	3	2	4	3	5	4	5	5	3	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib 1 very low ution Level:		2	2 low	ow 3 Medium			4 High			5 Very High						