GALOIS THEORY

1	Course Title:	GALOIS THEORY
2	Course Code:	MAT4061
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	7
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:	Yrd. Doç. Dr. Musa DEMİRCİ Yrd. Doç. Dr. Hacer ÖZDEN
16	Contact information of the Course Coordinator:	cangul@uludag.edu.tr, 0 224 2941657, Fen-Edebiyat Fakültesi Matematik Bölümü
17	Website:	
18	Objective of the Course:	The aim of this course is to give students some basic concepts of Galois Theory, to teach the techniques related to the solutions of polynomial equations.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	to be able to solve the 2nd, 3rd and 4th order polynomial equations
	2	to be able to state the fundamental theorem of Galois theory
	3	to be able to state the relations between groups, rings and polynomials
	4	to be able to classify domains, fields, subrings, subfields and ideals and give examples of those
	5	to let the students know the differences between rings, fields and domains
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21	Course Content:	

Course Content:		
Week	Theoretical	Practice
1	Rings	
2	Integral Domains and Fields	

3	Homomorphism and Ideals	
4	Quotient rings	
5	Polinomial rings	
6	Prime and maximal ideals	
7	Irreducible polinomials	
8	The general solution methods fort the third and fourth order equations	
9	Field extensions and finite fields	
10	Midterm exam and general review	
11	Galois group	
12	The roots of the unit and fields extensions	
13	The fundamental theorem Galois Theory	
14	Quadratic, cubic and quartic Galois groups	

22	Textbooks, References and/or Other Materials:	J. ROTMAN, Galois Theory, Springer, 1998; İ. N. CANGÜL, Galois Theory Lecture Notes
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Contribution of Term (Year) Learning Activities to	40.00		
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	4.00	56.00
Contribution of Final Exam to Success Grade	60.00		
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Measurement and Evaluation Techniques Used in the			
Field Studies	0	0.00	0.00
24 **ECTS / WORK LOAD TABLE** Midterm Exams	1	20.00	20.00
Others	0	0.00	0.00
Final Exams	1	30.00	30.00
Total Work Load			148.00
Total work load/ 30 hr			4.93
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	0	0	0	0	0	0	0	0	0
ÖK2	2	4	0	0	4	0	0	5	0	0	0	0	0	0	0	0
ÖK3	0	4	0	0	5	0	0	5	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0

| ÖK5 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 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