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
		6	
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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
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
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	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
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**