

## ALGEBRA II

1	Course Title:	ALGEBRA II	
2	Course Code:	MAT5206	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	2	
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. İSMAİL NACİ CANGÜL	
15	Course Lecturers:	Prof. Dr. Süleyman ÇİFTÇİ, 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	
17	Website:		
18	Objective of the Course:	The aim of the course is to extend the algebraic notions learned at undergraduate level and give advanced algebra topics.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Can define algebraic structures.
		2	Can give examples of algebraic structures.
		3	Can give examples of different situations on different algebraic structures.
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21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	Review of groups		
2	Review of rings, domains and fields		
3	Fundamental notions of Galois theory		
4	Roots of unity and Galois extensions		
5	Galois groups of quadratic, cubic and quartics		
6	Roots, radicals and real numbers		

<b>7</b>	Domains and fields	
<b>8</b>	Structure of finite fields	
<b>9</b>	Classification of finite fields	
<b>10</b>	Solvability of equations with radicals	
<b>11</b>	Norm and trace	
<b>12</b>	Simple extensions	
<b>13</b>	Seperable extensions	
<b>14</b>	Cyclotomic extensions	

<b>22</b>	Textbooks, References and/or Other Materials:	Algebra : A Graduate Course, I. Martin Isaacs, Algebra, Michael Artin
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<b>23</b>	Assesment	
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	0	0.00
Quiz	0	0.00
Homeworks, Performances	3	30.00
Final Exam	1	70.00
Total	4	100.00
Contribution of Term (Year) Learning Activities to Success Grade		30.00
Contribution of Final Exam to Success Grade		70.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>
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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	8.00	112.00
Homeworks, Performances	3	16.00	48.00
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	30.00	30.00
Total Work Load			232.00
Total work load/ 30 hr			7.73
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	4	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	2	0	0	3	0	0	3	3	0	0	0	0	0	0	0	0
ÖK3	0	4	0	3	5	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			