LINEEAR ALGEBRA I

1	Course Title:	LINEEAR ALGEBRA I	
2	Course Code:	MAT0503	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	-	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. Atilla Akpınar	
15	Course Lecturers:	Prof.Dr. Basri ÇELİK Prof.Dr. Esen İYİGÜN	
16	Contact information of the Course Coordinator:	E-posta: aakpinar@uludag.edu.tr Telefon: +90 224 2941774 Adres: Uludağ Üniversitesi Fen-Edebiyat Fakültesi Matematik Bölümü 16059 Görükle-Bursa-TÜRKİYE	
17	Website:		
18	Objective of the Course:	The primary objective of this course is to introduce algebraic structures as group, ring, field and so to understand the concept of vector space, which is constructed over these structures, with basic properties and applications.	
19	Contribution of the Course to Professional Development:	is to gain knowledge of basic linear algebra to students, to improve the ability of finding solution to problems and analytical thinking.	
20	Learning Outcomes:		
		1	knows the concepts of group, ring, field
		2	gives an understanding of the algebra of finite-dimensional vector spaces as a basis for further study of abstract algebra
		3	acquires an understanding of some fundamental ideas of linear algebra, including vectors, vector spaces, linear independence, bases, dimension and linear transformations, especially in the case of Rn and Cn
		4	knows sub-vector spaces
		5	learns real and complex inner product.
		6	knows the concepts of linear independence, basis and dimension.
		7	uses the Gram-Schmidt algorithm to orthonormalize a set of vectors.
		8	
		9	
		10	
21	Course Content:		
	Course Content:		
Week	Theoretical		Practice

1	Groups	
2	Fields and subfields	
3	The definition of vector spaces and their examples	
4	Standart vector spaces R^(n) and C^(n)	
5	Subvector spaces	
6	The properties of vector spaces R^(n)	
7	Midterm exam and evaluation of midterm exam, repeat of previous subjects	
8	Linear independent, the method of orthogonality	
9	The properties about basis of vector spaces, dimensions of subspaces	
10	Space of direct sums and subspaces of inner product spaces	
11	Linear transformations in vector spaces and examples of linear transformation	
12	Linear transformations corresponding to matrices	
13	Linear isomorphism, algebra of Hom(V,W)	
14	Textbooks, References and/or Other Materials:	1) Lineer Cebir, H.Hilmi Hacısalihoğlu, Ankara, 1983 2) Uygulamalı Lineer Cebir, B.Kol-D.R.Hill (tercume), 3) Lineal Algebra, Serge Lang, Newyork, 1972 4) Elemantary Linear Algebra, Hartfiel.Hobbs, 1987, PWS
22	Assesment	
23	Final Exams	

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	2.00	28.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	11.00	11.00
Others	14	2.00	28.00
Final Exams	1	11.00	11.00
Total Work Load			131.00
Total work load/ 30 hr			4.00
Midterm Exam	1	40.00	
ECTS Credit of the Course			4.00

Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		The system of relative evaluation is applied.

24	**ECTS / WORK LOAD TABLE**

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	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
ÖK5	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
ÖK7	0	0	0	0	0	0	0	1	1	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**				