PHYSICAL LINEAR ALGEBRA

1	Course Title:	PHYSICAL LINEAR ALGEBRA
2	Course Code:	MAT2495
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	3
7	ECTS Credits Allocated:	7.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. EMRULLAH YAŞAR
15	Course Lecturers:	Fen-Edebiyat Fakültesi Matematik bölümü tüm öğretim üyeleri
16	Contact information of the Course Coordinator:	e-posta:eyasar@uludag.edu.tr Telefon:0224 2941768 Adres:U.Ü Fen-Edb. Fak. Mat. Böl. B102 Görükle Bursa
17	Website:	
18	Objective of the Course:	The aim of this course to give to the physics students the knowledge about matrices which the need in their undergraduate and postgraduate studies
19	Contribution of the Course to Professional Development:	Gain the background to follow new developments in the field of linear algebra
20	Learning Outcomes:	
	1	Learns general concepts of linear algebra.
	2	Learns matrix definitions and basic matrix operations.
	3	Learns determinants.
	4	Learns matrix inversion operation.
	5	Understands the matrix's rank concept.
	6	Learns how to solve various types of linear equations systems.
	7	Understands the eigen value and eigen vector concepts.
	8	
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	10	
21	Course Content:	

Course Content:

Week	Theoretical	Practice
1	Matrix definitions, matrix summation and substraction.	Problem solving.
2	Matrix multiplication.	Problem solving.

3	Special matrices, matrix tranpozation, matrix decomposition.	Problem solving.
4	Determinants,Laplace's expansion, Cramer's rule.	Problem solving.
5	Rank of a matrix, rank properties.	Problem solving.
6	Matrix inversion, properties of inverse matrices.	Problem solving.
7	Solutions of systems of linear equations, homogeneous systems of linear equations.	Problem solving.
8	Inhomogeneous systems of linear equations.	Problem solving.
9	Matrix forms.	Repeating courses and midterm exam
10	Characteristic equation of a matrix.	Problem solving.
11	Eigen values of a matrix.	Problem solving.
12	Eigen vectors of a matrix.	Problem solving.
13	Matrix diagonalization.	Problem solving.
14	Matrix diagonalization (continued).	Problem solving.

22	Textbooks, References and/or Other Materials:	1) Linear Algebra I,II. Prof.Dr.H.Hilmi Hacısalihoğlu 2)Linear Algebra, Prof.Dr.Feyzi Başar
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBE	WEIGHT		
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical Home work-project	0	0.00 14	3.00	42.00
Practicals/Labs		14	2.00	28.00
Self study and preperation Total	2	14 100.00	5.00	70.00
Homeworks		0	0.00	0.00
Success Grade Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams Total		100.00 1	6.00	6.00
Others		14	4.00	56.00
Course Final Exams		to wait for a certain period of time to determine the level of 8.00	8.00	
Total Work Load				216.00
Total work load/ 30 hr		subject		7.00
ECTS Credit of the Course				7.00

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	5	5	0	0	5	4	0	5	5	0	0	0	0	0	0
ÖK2	3	3	2	0	0	3	3	0	2	3	0	0	0	0	0	0
ÖK3	5	5	4	0	0	5	3	0	3	3	0	0	0	0	0	0
ÖK4	5	5	5	0	0	5	3	0	3	4	0	0	0	0	0	0

ÖK5	5	5	5	0	0	5	3	0	3	4	0	0	0	0	0	0
ÖK6	5	5	5	0	0	4	2	0	2	2	0	0	0	0	0	0
ÖK7	5	5	5	0	0	4	2	0	3	3	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**