MATRIX THEORY

1	Course Title:	MATRIX THEORY	
2	Course Code:	MAT2018	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	2	
6	Semester:	4	
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:	Dr. Ögr. Üyesi SETENAY DOĞAN	
15	Course Lecturers:	Yrd.Doç.Dr.Nisa Çelik	
16	Contact information of the Course Coordinator:	setenay@uludag.edu.tr 0224 2941763 U.Ü. Fen Edebiyat Fakültesi Matematik Bölümü Nilüfer BURSA	
17	Website:		
18	Objective of the Course:	The aim of the course is to introduce the matrix and some special types of matrix, computing the matrix expansions finding the inverse matrix defining some special matrices LU decompozition method to find the inverse of matrix. Cryptography and applications	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Knows the definition of the matrix and some special types of matrices.
		2	Knows determinant and transpose matrix calculation.
		3	Knows the cyrptology.
		4	Knows that the upper and lower triangular matrix and calculating the definition.
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Matrix definition and basic properties	
2	Matrices of determinant calculation method	
3	Calculation of transpoze matrix	
4	Calculation of inverse matrix	

5	Some special types of matrix and applications.	
6	LU decompozition	
7	Obtain the inverse matrix with LU decompozition	
8	Solution of linear system of equations with LU decomposition	
9	LLT decomposition and solutions of systems of equations	
10	Midterm exam and general review	
11	Cholesky method and solutions of of systems of equations	
12	Cryptology	
13	Caesars cryptology method	
14	Hill Cryptology method and applications	

22	Textbooks, References and/or Other Materials:	Theory of matrices. Sam Perlis
23	Assesment	

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

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	0	0.00	0.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	14	4.00	56.00
Final Exams	1	12.00	12.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			4.00

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	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	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**				