ESOGÜ Mathematics and Computer Sciences Department COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	821617013	COURSE NAME	Timelike Curves and Surfaces I

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	TYPE	LANGUAGE
7	3	0	0	3	5	COMPULSORY (x) ELECTIVE ( )	Turkish

COURSE CATAGORY			
Mathematics	Computer		Social Science
x		X	

ASSESSMENT CRITERIA

	Evaluation Type	Quantity	%
MID-TERM	1st Mid-Term	1	40
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (……)		
FINAL EXAM		1	60

PREREQUIEITE(S)	
COURSE DESCRIPTION	Parameterized curves, Curves theory, Lorentz space and Minkowski space, Spacelike, Timelike and Null vectors and curves, Properties of Timelike Curves, Product of vectors in 3-dimensional Minkowski space $\mathbf{R}^3_1$, Spacelike and timelike surfaces in Minkowski 3- space $\mathbf{R}^3_1$, Timelike Ruled surfaces, The spacelike developable ruled surfaces and its the distribution parameter
COURSE OBJECTIVES	The main of the course is to introduce the concepts and techniques involved in the basic topics listed in this lecture and to develope skills in applying those concepts and techniques to the solution of problems
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	Gain analytical thinking and problem solving ability.
COURSE OUTCOMES	Gain sufficient knowledge of The Ruled Surfaces in Minkowski Spaces subject, related with science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of problems.
TEXTBOOK	**Turgut, A**., 3 Boyutlu Minkowski Uzayında Spacelike ve Timelike Regle Yüzeyler, Ankara Üniversitesi, Fen Bilimleri Enstitüsü, Ankara.
OTHER REFERENCES	1- **O'Neill, B**, , 1983, Semi Riemann Geometry, Akademic Press, Newyork 2- **Hacısalihoğlu, H. H.,** , 2004, Diferensiyel Geometri, Cilt I-II, Ankara. 3- **Sabuncuoğlu. A.,** 2006, Diferensiyel Geometri**,** Ankara **4- Ekici, C.** 2021**,** Eğrilerin ve Yüzeylerin Diferensiyel Geometrisi, ESOGÜ
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Lorentz space and Minkowski space,
2	Spacelike, Timelike and Null vectors and Curves
3	Properties of Timelike Curves,
4	Product of vectors in 3-dimensional Minkowski space $\mathbf{R}^3_1$
5	Timelike and spacelike surfaces in Minkowski 3- space $\mathbf{R}^3_1$
6	Spacelike and timelike surfaces in Minkowski 3- space $\mathbf{R}^3_1$
7	Problem çözme
8	Ara Sınav
9	Spacelike Ruled surfaces
10	The spacelike developable ruled surfaces
11	The distribution parameter of a spacelike developable ruled surfaces
12	Timelike Ruled surfaces
13	Examples of spacelike surfaces in Minkowski 3- space $\mathbf{R}^3_1$
14	3-boyutlu $\mathbf{R}^3_1$ Minkowski uzayında spacelike yüzey örnekleri
15	Problem solving
16-17	Final Exam

DİKKAT!... Aşağıdaki PROGRAM ÇIKTILARI Mühendislik için yazılmıştır. BÖLÜM kendi eğitim amaç ve hedeflerini destekleyen Program Çıktılarını belirledikten sonra bu kısım hazırlanmalıdır. ŞABLON OLARAK KULLANMAYINIZ

NO	PROGRAM OUTCOMES	3	2	1
1	The ability to apply knowledges of Mathematics and Computer Sciences,		x	
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,		x	
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,	x		
4	The skill to solve and design a problem process in accordance with a defined target,		x	
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,	x		
6	The skill to use the modern techniques and computational tools needed for mathematical applications,	x		
7	The skill to make team work within the discipline and interdisciplinary,		x	
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,		x	
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,	x		
10	The skill to have professional and ethical responsibility,			x
11	The skill to have consciousness for quality issues and scientific research,		x	
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,			x
13	Ability to solve problems in the working life faced to find an appropriate algoritms via mathematical modeling and to write computer programs,			x
14	The skill to developed design of software systems at different complex levels,			x
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.		x	
1:None. **2**:Partially contribution. **3**: Completely contribution.				

Instructor(s): Prof. Dr. Cumali EKİCİ

Signature: **Date:**