	STATISTIC	AL ME	THODS IN PHYSICS						
1	Course Title:	STATIST	FICAL METHODS IN PHYSICS						
2	Course Code:	FZK4107	7						
3	Type of Course:	Optional							
4	Level of Course:	First Cyc	cle						
5	Year of Study:	4							
6	Semester:	7							
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:	-							
12	Language:	Turkish							
13	Mode of Delivery:	Face to f	face						
14	Course Coordinator:	Prof. Dr.	AHMET CENGİZ						
15	Course Lecturers:								
16	Contact information of the Course Coordinator:	Prof. Dr. B. U. Ü. Görükle email: ac Tel: 0224	. Ahmet Cengiz Fen-Edebiyat Fakültesi Fizik Bölümü 16059 Bursa cengiz@uludag.edu.tr 24 2941695						
17	Website:								
18	Objective of the Course:	By giving the data educatio	g the basic concepts in Statistics, to make the solution and analysis of the problems related to physics, mathematics, on-teaching and other areas.						
19	Contribution of the Course to Professional Development:	Applies t	he statistical information to Physics subjects.						
20	Learning Outcomes:								
		1	Learns the basic statistical parameters.						
		2	Learns the basic statistical distributions.						
		3	Learns the basic concepts of probability.						
		4	Learns the probability calculations.						
		5	Learns frequency distributions.						
		6	Learns the sampling distribution.						
		7	Learns the sampling distributions of the difference and sum of two distributions.						
		8	Calculates discretion interval of accumulation parameters.						
		9	Makes hypothesis testing and decides as statistical.						
		10	Makes ?2 test. Fits the appropriate curves to the obtained data. Makes the correlation analysis.						
21	Course Content:								
		Co	ourse Content:						
Week	Theoretical		Practice						
1	Basic Concepts Sample and Accumulation								

2 3	Frequency Distributions 1.Class Range and Class Limits 2.Class boundaries 3.Median 4.Class Width 5.Relative Frequency 6.Cumulative Frequency 7.Graphics: Histogram, Frequency Polygon and Frequency Curve. Definitions and Calculations of Average 1.Arithmetic Mean Weighted Average Properties of Weighted average Short Calculation of Weighted Average Arithmetic Average of Grouped Data 2.Geometric Mean 3.Harmonic Mean 4.Median 5.Mode 6 Relation Between Mean, Median and Mode				
4	Measures of Distribution and Variation 1.Distribution Range 2.The Average Absolute Deviation 3.Standard Deviation 4.Standard Deviation Calculation by Simple Way 5.Standard Deviation Calculation for grouped data (Coding Method) 6.Properties of Standard Deviation				
Activit	es	1	Number	Duration (hour)	Total Work
					Load (hour)
Theore	ReaSum of the probabilities	1	14	3.00	42.00
Practic	als/Labs	0)	0.00	0.00
Self stu	Quantinuous Propability Distributions Quand Dreperation 42-Expected Value	1	14	4.00	56.00
Homew	vorks	()	0.00	0.00
Project	Combination Analysis and Probability	0)	0.00	0.00
Field S	tudies	()	0.00	0.00
Midtern	n exams	1	1	30.00	30.00
Others		0)	0.00	0.00
Final E	A Bysomial Distribution	1	1	52.00	52.00
Total W	/ork Load				180.00
Total w	An Norada 50 intribution				6.00
ECTS	Credit of the Course				6.00
	 Random Sampling Sampling Distribution Sampling Distribution of Averages and Central Limit Theorem Sampling Distribution of Ratios Sampling Distributions of Differences and Sums 				
8	Statistical Prediction Theory 1.Point Prediction 2.Range Prediction 3.Properties of Prediction 4.Discretion Interval Pedictions of Accumulation Parameters				

Statistical Decision Theory 1.Decision and Statistical hypotheses in Statistics 2.Type I and Type II Errors 3.Precision Level – Risk 4.Test in Normal Distribution 5.Steps of Hypothesis Testing 6.One-Sided Test 7.Hypothesis Tests related to Differences of																		
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Text Mate	Textbooks, References and/or Other Materials:									 A. CENGİZ, Lecture Notes on Statistical Methods in Physics. H. ÖZYOL, Lecture Notes on Statistical Methods in Physics. 								
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ÖK8	3	5	4	0	0	4	0	0	0	0	3	0	0	0	0	0
ÖK9	5	5	5	0	0	3	0	0	0	0	4	0	0	0	0	0
ÖK10	5	5	5	0	0	4	0	0	0	0	4	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 \	/ery	low		2 Iow		3	Medi	um		4 Hig	h		5 Ver	y High	