	STATISTICAL PH	YSICS	S AND THERMODYNAMICS						
1	Course Title:	STATIS	TICAL PHYSICS AND THERMODYNAMICS						
2	Course Code:	FZK3011							
3	Type of Course:	Compuls	sory						
4	Level of Course:	First Cycle							
5	Year of Study:	3							
6	Semester:	5							
7	ECTS Credits Allocated:	6.00							
8	Theoretical (hour/week):	5.00							
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. Hüseyin Ovalıoğlu							
15	Course Lecturers:		Prof. Dr. Ahmet PEKSÖZ, Dr. Öğr. Üy. Cengiz AKAY, Dr. Öğr. Üy. Handan Engin KIRIMLI,						
16	Contact information of the Course Coordinator:	Prof. Dr. Hüseyin OVALIOĞLU E-mail: ovali@uludag.edu.tr İş Tel: 0 224 29 41 691 Adres: Bursa Uludağ Üniversitesi Fen Edebiyat Fakültesi Fizik Bölümü, 16059 Görükle Kampüsü BURSA							
17	Website:								
	Ohio ation of the Common	To teach the basics of statistical physics, to understand the laws and some applications of thermodynamics, to prepare for statistical mechanics.							
18	Objective of the Course:	and som	ne applications of thermodynamics, to prepare for statistical						
19	Contribution of the Course to Professional Development:	and som mechani To teach	ne applications of thermodynamics, to prepare for statistical ics. In the basics of statistical physics, to understand the laws the applications of thermodynamics, to prepare for statistical						
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	Course Content:										
Week	Theoretical	Practice									
1	Characteristic features of macroscopic systems: Fluctuations in equilibrium state, Irreversibility and approach to equilibrium, Properties of equilibrium state, Temperature and temperature, Important problems of macroscopic physics.										
2	Basic Probability Concepts: Statistical ensembles, Simple relations between probabilities, Binomial distribution, Mean values, Finding mean values in a spin system, Continuous probability distributions										
3	Gauss and Poisson distributions, magnitude of energy fluctuations, Molecular collisions and the pressure of a gas.										
4	Statistical description of particle systems: Properties of the state of a system, Statistical community, Probability operations, Number of states that can be entered in a macroscopic system.										
5	Distribution functions in statistical physics: Maxwell-Boltzmann statistics, Bose-Einstein statistics, Fermi-Dirac statistics										
6	Thermal interaction: Distribution of energy between macroscopic systems, approach to thermal equilibrium										
7	Temperature interaction: Temperature, Small heat transport, System touching a heat store, Paramagnetism, Average energy of an ideal gas, Average pressure of an ideal gas										
8	Microscopic theory and macroscopic measurements: Determination of absolute temperature, High and low absolute temperatures, Work, Internal energy and heat, Heat capacity, Entropy, Midterm										
9	Canonical distribution in classical approach: Classical approach, Maxwell velocity distribution, Discussion of Maxwell velocity distribution, Co-partition theorem, Applications of the co-partition theorem, The eigenesis of solids										
10	General thermodynamic interaction: Dependence of the number of states on external parameters, general relations valid in equilibrium, Applications to an ideal gas										
11	Basic suggestions of statistical thermodynamics, Equilibrium conditions, Balance between phases, Conversion of randomness to regularity										
12	Simple kinetic theory of transport processes: Average free path, Viscosity and momentum transport, Thermal conductivity and energy transport.										
13	Self-propagation and transport of molecules										
14	Electrical conductivity and charge transport										
22	Textbooks, References and/or Other Materials:	Berkeley Physics Lectures Vol 5, F. Reif. Crawford, Jr. Mc Graw Hill Book 1965. Statistical Physics, F. Apaydın, Hacettepe Üniversitesi Müh. Fak. Publications, Publication, Ankara, 2004.									
23	Assesment										

TERM LEARNING ACTIVITIES	NUMBE R	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 Success Grade	es to	40.00							
Contribution of Final Exam to Success Grade)	60.00							
Total		100.00							
Measurement and Evaluation Techniques Us Course	sed in the	One midterm and one final exam will be held to understand how much the information about this course has been learned.							
24 ECTS / WORK LOAD TABLE									

Activites	Number	Duration (hour)	Load (hour)
Theoretical	14	5.00	70.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	8.00	112.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	2.00	2.00
Others	0	0.00	0.00
Final Exams	1	2.00	2.00
Total Work Load			186.00
Total work load/ 30 hr			6.20
ECTS Credit of the Course			6.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	3	5	4	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	5	5	5	0	0	0	0	0	0	0	0
ÖK4	0	0	5	5	5	5	0	0	0	0	0	0	0	0	0	0
ÖK5	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib 1 very low ution Level:		2 low			3 Medium			4 High			5 Very High					