STOCHASTIC PROCESSES										
1	Course Title:	STOCH	ASTIC PROCESSES							
2	Course Code:	END515	5							
3	Type of Course:	Optional								
4	Level of Course:	Second	Cycle							
5	Year of Study:	1								
6	Semester:	1								
7	ECTS Credits Allocated:	7.50								
8	Theoretical (hour/week):	3.00								
9	Practice (hour/week):	0.00								
10	Laboratory (hour/week):	0								
11	Prerequisites:	Undergraduate Level Probability and Statistics								
12	Language:	Turkish								
13	Mode of Delivery:	Face to face								
14	Course Coordinator:	Doç. Dr. Fatih ÇAVDUR								
15	Course Lecturers:									
16	Contact information of the Course Coordinator:	e-posta: fatihcavdur@uludag.edu.tr, Telefon: + 90 (224) 294 20 77 Adres: Uludağ Üniversitesi, Mühendislik-Mimarlık Fakültesi, Endüstri Mühendisliği Bölümü, Görükle Kampüsü, 16059 Nilüfer, Bursa								
17	Website:									
18	Objective of the Course:	Learning basic concepts of stochastic processes.								
19	Contribution of the Course to Professional Development:									
20	Learning Outcomes:									
		1	Being able to understand the basics of stochastic processes.							
		2	Having knowledge of basic probability concepts.							
		3	Being able to analyze real-life systems using stochastic processes.							
		4								
		5								
		6								
		7								
		8								
		9								
		10								
21	Course Content:									
14/ 1		Co	burse Content:							
Week	I neoretical		Practice							
	-Sample Space, Events, Probabilitie Events -Basic Definitions and Theorems -Conditional Probability	s of								

2	Random Variables -Introduction to Random Variables, Definitions -Mean and Variance of Random Variables -Discrete Random Variables -Continuous Random Variables							
3	Expectation and Conditional Expectation -Definition of Expectation -Conditional Expectation -Computing Probabilities and Expectations using Conditioning							
4	Discrete Probability Distributions -Bernoulli Process and Binomial Distribution -Negative Binomial, Geometric, Hyper- Geometric Distributions -Poisson Distribution							
5	Continuous Probability Distributions -Uniform Distribution -Exponential Distribution -Normal Distribution -Gamma Distribution -Beta Distribution							
6	Discrete Markov Chains -Markov Chains, Definitions and Basic							
Activit	IConcepts I res	Number	Duration (hour)	Total Work Load (hour)				
Theore	tical Continuous Time Markov Chains	14	3.00	42.00				
Practic	als/Labs	0	0.00	0.00				
Self stu	and Basic Concepts Ov and properation -Some Properties of Continuous Time Markov	14	10.00	140.00				
Homew	vorks	1	30.00	30.00				
Project	s Constinuent Time Markey Obeing (const.)	0	0.00	0.00				
Field S	tudies	0	0.00	0.00				
Midterr	TARE HOSTIONS	1	5.00	5.00				
Others		0	0.00	0.00				
Final E	征政 ponential Distribution, Definitions and	1	8.00	8.00				
Total V	/ork Load			225.00				
Total w	Exponential Distribution and Poisson Process			7.50				
ECTS	Credit of the Course -Counting Process and Poisson Process			7.50				
	-Some Properties of Poisson Process							
12	Queuing Theory -Basic Concepts, Notation -Long-Run or Steady-State Parameters -Basic Queuing Systems, M/M/1, M/M/c etc.							
13	Applications							
14	Student Project Presentations							
22	Textbooks References and/or Other	 Introduction to Probability Models; 10th Edition; Sheldon Ross; Academic Press Stochastic Processes, Sheldon Ross, 2nd Edition; Wiley 						
	Materials:	Ross; Academic Press 2. Stochastic Processes	s, Sheldon Ross, 2n	d Edition; Wiley				

TERM LEARNING ACTIVITIES						N F	IUMBE	WE	WEIGHT								
Midterm Exam						1		25	25.00								
Quiz						0)	0.0	0.00								
Home work-project						1		25	25.00								
Final Exam 1						1		50	50.00								
Total 3						5	10	100.00									
Contribution of Term (Year) Learning Activities to Success Grade						to	50	50.00									
Contribution of Final Exam to Success Grade						50	50.00										
Total								10	100.00								
Measurement and Evaluation Techniques Used Course					d in th	e											
24 ECTS / WORK LOAD TABLE																	
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	1	5	3	1	1	1	1	1	5	4	4	1	1	1	1	1	
ÖK2	1	5	3	1	1	1	1	1	5	4	4	1	1	1	1	1	
ÖK3	1	5	3	1	1	1	1	1	5	4	4	1	1	1	1	1	
LO: Learning Objectives PQ: Program Qualifications																	
Contrib ution1 very low2 lowLevel:1				3	Medi	ium	4 High			5 Very High							