

SIGNALING AND SWITCHING SYSTEMS

1	Course Title:	SIGNALING AND SWITCHING SYSTEMS	
2	Course Code:	EEM4411	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
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:	Yrd.Doç.Dr. SAİT ESER KARLIK	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	E-posta:ekarlik@uludag.edu.tr Tel: (224) 294 20 95 Adres: Elektronik Mühendisliği Bölümü 5. Kat, No:529	
17	Website:		
18	Objective of the Course:	To gain sufficient background about basic devices and architectures used in current signalling and switching systems; to determine and solve problems in signalling and switching systems by using related standards and protocols; to select proper signalling and switching methods for system applications.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To gain sufficient background about basic devices and architectures used in current signalling and switching systems
		2	To determine problems in signalling and switching systems
		3	To solve problems in signalling and switching systems
		4	To design signalling and switching systems that can meet specific requirements under realistic limitations and conditions
		5	To select proper signalling and switching methods for system applications
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	

1	Introduction to signalling systems, signalling in telephony networks, classification of signalling systems			
2	In-band signalling, out-band signalling, signalling system no.5, MFC-R2 signalling			
3	Signalling in access networks: GR-303 standards, V5 standards, introduction to common channel signalling			
4	Common channel signalling: Signalling system no.6 and no.7 standards, signalling units, signalling lines and signalling networks, MTP1, MTP2, MTP3 and TUP signalling			
5	Digital Subscriber Signalling System No.1 (DSS1): Call control signalling, ISUP signalling, end-to-end signalling			
6	Introduction to switching systems, requirement for switching methods, classification of switching systems: circuit switching systems, switching systems with memories			
7	Circuit switching methods: space, time, frequency domain switching; message switching technique, packet switching techniques: datagram mode, virtual circuit mode			
8	Repeating courses and midterm exam			
9	Telephony network: multi-exchange			
Activites		Number	Duration (hour)	Total Work Load (hour)
10	Enterprise switching systems and private network architectures	14	3.00	42.00
Practicals/Labs		0	0.00	0.00
Self study and preparation		14	4.00	56.00
Homeworks		0	0.00	0.00
11	Techniques, signalling in ATM networks	0	0.00	0.00
Field Studies		0	0.00	0.00
12	Switches and add/drop multiplexers, all-optical packet switching techniques, optical switching systems	2	20.00	40.00
Others		0	0.00	0.00
Final Exams		1	27.00	27.00
Total Work Load				165.00
Total work load/ 30 hr				5.50
ECTS Credit of the Course				4.00
22	Textbooks, References and/or Other Materials:	1. Signalling in Telecommunication Networks, John G. Van Bosse and Fabrizio U Devetak, Wiley Series, 2006. 2. Telecommunications Switching, J. Gordon Pearce, Springer, 2001. 3. Signaling System # 7, Travis Russell, McGraw-Hill, Fifth Edition, 2006. 4. Optical Switching, G. I. Papadimitrou, C.Papazoglou, A. S. Pomportsis, Wiley Series, 2006		
23	Assesment			
TERM LEARNING ACTIVITIES		NUMBER	WEIGHT	
Midterm Exam		2	50.00	
Quiz		0	0.00	

Home work-project	0	0.00
Final Exam	1	50.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade	50.00	
Contribution of Final Exam to Success Grade	50.00	
Total	100.00	
Measurement and Evaluation Techniques Used in the Course		
24	ECTS / WORK LOAD TABLE	

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	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	5	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							