NETWORK SYNTHESIS

1	Course Title:	NETWORK SYNTHESIS	
2	Course Code:	EEM4117	
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. NEYİR ÖZCAN SEMERCİ	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	neyir@uludag.edu.tr Elektrik-Elektronik Mühendisliği Bölümü 4.Kat Oda No:433 0224 294 06 50	
17	Website:		
18	Objective of the Course:	The objective of this course is to summarize the basic problems and ways of the passive and active circuit realization and to teach students active and passive network synthesis, filter design .	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To gain the ability to understand network synthesis problems.
		2	To gain the ability to apply knowledge of mathematics, science, and engineering to Electronics Engineering problems, and to design a system, component, or process to meet desired.
		3	To gain the ability to apply network-synthesis methods using passive and active elements.
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21	Course Content:		
	Course Content:		
Week	Theoretical		Practice

1	Introduction to Network Synthesis.	
2	Network functions and Synthesis of 1-ports	
3	Positive real functions	
4	Properties and realizations of LC driving-point functions	
5	Properties and realizations of RC/RL driving-point functions	
6	Properties and realizations of RLC driving-point functions	
7	Synthesis of passive 2-ports	
8	Midterm Exam	
9	Synthesis of 2-ports converted to synthesis of 2-terminals	
10	Zero shifting technique	
11	Active network synthesis: decomposition, coefficient matching and signal flow graph methods	
12	Active network synthesis: decomposition, coefficient matching and signal flow graph methods	
13	Filter approximations	
14	Active filters	

22	Textbooks, References and/or Other	1. Fuat Anday, Devre Sentezi,İTÜ yayınları 3. H.Y.-Lam, Analog and Digital Filters:Design and Realization, Prentice Hall, 1979

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	2.00	28.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	0	0.00	0.00
Final Exams	1	30.00	30.00
Total Work Load			125.00
Total work load/ 30 hr			4.17
ECTS Credit of the Course			4.00

23	Assessment		
		R	
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 to Success Grade			40.00
Contribution of Final Exam to Success Grade			60.00
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	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0

ÖK3	0	0	0	5	5	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**