MICROWAVE ELECTRONICS

1	Course Title:	MICROWAVE ELECTRONICS	
2	Course Code:	EEM3202	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	3	
6	Semester:	6	
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:	No	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. SİBEL YENİKAYA	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	Doç. Dr. Sibel YENİKAYA sguler@uludag.edu.tr Tel: (224) 294 2031 Adres: Elektronik Mühendisliği Bölümü 3. Kat, No:309	
17	Website:		
18	Objective of the Course:	To improve design, analysis and evaluation ability in microwave frequencies.	
19	Contribution of the Course to Professional Development:	Provides the ability to reach and interpret information about the field of study.	
20	Learning Outcomes:		
		1	Gain the ability to model and solve microwave elements and systems using theoretical and practical knowledge.
		2	Gain the ability to identify, model, and solve the problems of active microwave circuits of impedance matching and microwave amplifiers; the ability to select and apply appropriate analysis and modeling methods for these problems.
		3	Gain the ability to design partly or fully a microwave circuit meeting specific requirements, ability to apply modern design methods in this context.
		4	The ability to use information technologies in an efficient way to design active microwave circuits.
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	introduction to microwave	

2	Transmission line theory	
3	Microstrip lines	
4	Microwave Circuit Analysis	
5	Signal flow graphs	
6	Impedance matching circuits.	
7	Transistors at high frequencies	
8	Design amplifiers with s-parameters, amplifier gain, stability and input, output impedance matching of amplifiers.	
9	Review of Past Lecturers	
10	Noise in microwave amplifiers.	
11	Wideband microwave amplifiers.	
12	Microwave osilators	
13	Microwave Project presentations	
14	Microwave Project presentations	

22	Textbooks, References and/or Other Materials:	1. Microwave Transistor Amplifiers : Analysis and Design, 2nd Ed., G. Gonzalez, Prentice-Hall, 1997. 2. RF/Microwave Circuit Design for Wireless Application, U.L. Rohde and D.P. Newkirk, Wiley, 2000. 3. Microwave Engineering, 2nd Ed., D.M. Pozar, John Wiley, 2001

Activites	Number	Duration (hour)	Total Work Load (hour)
Midterm Exam	1	20.00	
Theoretical	14	3.00	42.00
Quiz	0	0.00	
Practicals/Labs	0	0.00	0.00
Home work-project	1	20.00	
Self study and preperation	0	0.00	0.00
Final Exam	1	60.00	
Homeworks	0	0.00	0.00
Total	3	100.00	
Projects	0	0.00	0.00
Contribution of Term (Year) Learning Activities to		40.00	
Field Studies	0	0.00	0.00
Midterm exams	1	36.00	36.00
Contribution of Final Exam to Success Grade		60.00	
Others	0	0.00	0.00
Total		100.00	
Final Exams	1	36.00	36.00
Measurement and Evaluation Techniques Used in the			
Total Work Load			114.00
Total work load/ 30 hr	Education Regulation.		3.80
ECTS Credit of the Course			4.00

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	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