

RADAR CROSS SECTION PREDICTION AND REDUCTION TECHNIQUES

1	Course Title:	RADAR CROSS SECTION PREDICTION AND REDUCTION TECHNIQUES	
2	Course Code:	EEM6205	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
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:	Prof. Dr. UĞUR YALÇIN	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	e-posta: uyalcin@uludag.edu.tr Tel: +90 (224) 2942023 Adres: Bursa Uludağ Üniversitesi, Mühendislik Fak. Elektrik Elektronik Mühendisliği Bölümü Nilüfer / BURSA	
17	Website:		
18	Objective of the Course:	With the advent of the radar, radar cross-section area of defense technology as one of the most important areas of research in the design of the land / sea / air battleship vehicles. Synthesis and analysis of invisible objects and emitting coating technologies and the geometrical and physical properties of the absorber materials beginning the most important military secrets. In this course, the radar cross section analysis and synthesis techniques for electromagnetic analysis in the literature systematically examined and compared with a large number of examples	
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	Ability to use radar cross-section area estimate techniques in advanced research
		2	Ability to analyze radar cross-section estimate techniques
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	

1	Radar systems	
2	Radar systems	
3	Basic concepts about electromagnetics	
4	Common occurrence of principles and theorems	
5	The border / glow / edge conditions, polarization	
6	Radar waveforms, induction theorems	
7	Radar Cross Section (RCS) definitions	
8	Radar Cross Section (RCS) definitions	
9	Stealth technologies	
10	Radar absorbing materials	
11	Analytical / asymptotic techniques used in RCA analysis	
12	The overall presentation of numerical techniques	
13	Software used in the RCA	
14	RCS measurement systems and techniques	
22	Textbooks, References and/or Other Materials:	1.D.L. Adamy (Ed.) EW 101 : A First Course in Electronic Warfare, Artech House 2001. 2.Radar Signature Analysis and Imaging of Military Targets, Agard Conference Proceedings 583, 1996. 3.K. J. Vinoy, R. M. Jha, Radar Absorbing Materials: From Theory to Design and Characterization, Kluwer Academic Publishers; Book and Disk Ed. 1996. 4.D.C. Jenn, Radar and Laser Cross Section Engineering, American Institute of Aeronautics and Astronautics, Inc. 1995. 5.A.K. Bhattacharyya, High-Frequency Electromagnetic Techniques, John Wiley & Sons, Inc. 1995. 6.A.K. Bhattacharyya, D.L. Sengupta, Radar Cross Section Analysis and Control, Artech House 1991. 7.E.F. Knott, J.F. Shaeffer, M.T. Tuley, Radar Cross Section, Artech House, 2nd Ed. 1993. 8.M.I. Skolnik, Radar Handbook, 2nd Ed. McGraw Hill 1990. 9.J.W. Crispin, K.M. Siegel (Eds.), Methods of Radar Cross Section Analysis, Academic Press 1968.
23	Assesment	
TERM LEARNING ACTIVITIES		NUMBE R
Midterm Exam		1
Quiz		0
Home work-project		0
Final Exam		1
Total		2
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	Midterm Exam and Final Exam
24	ECTS / WORK LOAD TABLE

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	4.00	56.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	30.00	30.00
Others	0	0.00	0.00
Final Exams	1	52.00	52.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

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
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							