LI	IDAR AND RADAR SY	STEM VEł	IS FOR HYBRID AND ELECTRIC						
1	Course Title:	LIDAR AND RADAR SYSTEMS FOR HYBRID AND ELECTRIC VEHICLES							
2	Course Code:	OHE5018							
3	Type of Course:	Optional							
4	Level of Course:	Second Cycle							
5	Year of Study:	1							
6	Semester:	2							
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 f	face						
14	Course Coordinator:	Doç. Dr. ABDURRAHMAN GÜNDAY							
15	Course Lecturers:	-							
16	Contact information of the Course Coordinator:	E-posta:agunday@uludag.edu.tr Tel: (224) 29 42791 Adres: Elektrik - Elektronik Mühendisliği Bölümü 3. Kat, No: 304							
17	Website:								
18	Objective of the Course:	Gaining knowledge concerning Lidar and Radar systems for usage of Hybrid Electric Vehicles. Furthermore, learning functionalities of the sub-systems and equipments of Lidar and Radara systems.							
19	Contribution of the Course to Professional Development:	Obtaining the information and ability regarding the modeling and designing of Liidar and Radar systems and their sub-systems.							
20	Learning Outcomes:								
		1	Learns the operating principles of Lidar and Radar.						
		2	Has knowledge and information with respect to the continuous pulse radar, moving target radar and pulsed radar.						
		3	Learns the parameters and specific events effecting the sensing performances of Lidar and Radar systems.						
		4	Takes information related to both Radar systems and technologies and their sub-systems in Hybrid Electric Vehicles.						
		5	Takes information related to both Lidar systems and technologies and their sub-systems in Hybrid Electric Vehicles.						
		6							
		7							
		8							
		9							
		10							
21	Course Content:								
	Course Content:								
Week	Theoretical		Practice						
1	Radar (Radio detection and ranging and working principle of Radar) systems							

2	Sensing and measurement processe probability consepts in Radar	S,							
3	Cross section of the target in Radar, factors limiting Radar range and sens performance	the sing							
4	Resolution, pulse compression Rada	r							
5	Continuous wave and mobilizing targ Radars	et							
6	Pulse Radars and compressibility phenomenon of the pulses								
7	Radar antennas and synthetic apertu Radars	ire							
8	Midterm Exam + General Review								
9	Lidar-Ladar (Light detection and rang systems and working principle of Lida	jing) ar							
10	Diffferences between Lidar and Rada technologies	ar							
11	Airborne Lidar systems (ALS) and the working priciples	eir							
12	Terrestrial Lidar systems (TLS) and t working principles	heir							
13	Lidar systems in Hybrid Electric Vehi the sensors (GPS, INS-Inertia Naviga Systems, cameras, other sensors)	cles and ation							
14	Radar systems and technologies in F	lybrid							
Activit	es			Number	Duration (hour)	Total Work Load (hour)			
Theore	tical		⊑ 2	Ah Introduction to Lid	3.00 at Technology Dat	42.00 a and			
Practica	als/Labs			0	0.00	0.00			
Self stu	dy and preperation		Je	h ay betzhola, bhan ha ennifer Halleran, NOA	Coastal Services	gosky, and Center-2012)			
Homew	vorks			0	0.00	0.00			
Project	6		4	RADAR Systems-Dr.	0. Ravi Shankar R	Mrs.S.			
Field St	tudies			0	0.00	0.00			
Midtern	n exams		6	â Modern Radar Systems Second Edition- Pansh					
Others				0	0.00	0.00			
Final E	kams		S	Kolnik-1981	70.00	70.00			
Total W	/ork Load					182.00			
T6RMV4	GAROUNG 30 GTIVITIES	NUMBE	W	EIGHT		6.07			
ECTS (Credit of the Course					6.00			
Quiz	//	0	0.00						
Home v	work-project	0	0.00						
Final E	xam	1	100.00						
Total		1	100.00						
Contrib Succes	ution of Term (Year) Learning Activities	es to	0.00						
Contrib	ution of Final Exam to Success Grade	9	100.00						
Total			100.00						
Measur Course	rement and Evaluation Techniques Us	sed in the	Measurement and evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on postgraduate education.						
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	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	b 1 very low				2 low	ow 3 Me			um 4 High			5 Very High				