REVERSE ENGINEERING

1	Course Title:	REVERSE ENGINEERING
2	Course Code:	OTO4039
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:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. ABDİL KUŞ
15	Course Lecturers:	Fakülte Yönetim Kurullarının görevlendirdiği öğretim elemanları.
16	Contact information of the Course Coordinator:	Prof. Dr. Abdil KUŞ Bursa Uludağ Üniversitesi, Otomotiv Müh. Tel: 2942344 abdilkus@uludag.edu.tr
17	Website:	
18	Objective of the Course:	Informing students about the use of Reverse Engineering systems and tools in the automotive field
19	Contribution of the Course to Professional Development:	To gain significant experience and knowledge in this field by analyzing the use of Reverse Engineering systems in product design and development and their contributions with projects.
20	Learning Outcomes:	

	1	Learning the concept and tools of Reverse Engineering
	2	Learning Reverse Engineering tools in the product design process cycle
	3	Learning modeling processes through scanning and point cloud
	4	Learning additive manufacturing and production methods
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21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	3D optical and Laser scanning systems	
2	Point cloud and polygon structure and its parameters	
3	Adjustments on 3D point cloud and Polygon Modeling techniques	

4	Polygon editing and optimization	
5	Solid modeling techniques	
6	Surface modeling techniques	
7	Future based modelling	
8	Boundary fit modelling	
9	Regions and Alignment	
10	Referance geometries	
11	Wizard based modelling	
12	Additive Manufacturing technolohies	
13	Dimensional analysis and data transfer	
14	Prototype production and production methods	
22	Textbooks, References and/or Other Materials:	1) Wego Wang, Reverse Engineering, Technology of Reinvention Copyright Year 2010. 2) 3D Syatems, eBook, Drive Product Innovation with Reverse Engineering, May, 2020. 3)https://www.3dsystems.com/material-finder?refinementList%5Bmaterial_type%5D%5B0%5D=Dental 4) https://www.youtube.com/watch?v=7Vp6A0FHNL0
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	25.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Final Exam			
Theoretical	14	3.00	42.00
Total	6	100.00	
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	4	10.00	40.00
Projects	4	10.00	40.00
Total		100.00	
Field Studies	0	0.00	0.00
Midterm exams	1	2.00	2.00
Others	0	0.00	0.00
Final Exams	1	2.00	2.00
Total Work Load			126.00
Total work load/ 30 hr			4.20
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	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	4	3	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

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High