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
Final Exam	1	25.00
Total	6	100.00

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	0	0.00	0.00
Homeworks	4	10.00	40.00
Projects	4	10.00	40.00
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