INDUSTRIAL DESIGN AND MANUFACTURING I

1	Course Title:	INDUSTRIAL DESIGN AND MANUFACTURING I
2	Course Code:	OTO2009
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	3
7	ECTS Credits Allocated:	2.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	1
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. ABDİL KUŞ
15	Course Lecturers:	Prof.Dr. Abdil KUŞ
16	Contact information of the Course Coordinator:	2942344
17	Website:	https://www.uludag.edu.tr/
18	Objective of the Course:	Teaching students ISO programming and manufacturing processes for part design and production on CNC machines, which are among the machining technologies most commonly used in the manufacturing sector.
19	Contribution of the Course to Professional Development:	Developing students' competencies in CNC Turning and Milling technologies and programming for part design and production.
20	Learning Outcomes:	
	1	Working principles of CNC machine tools and axis tools, coordinate inputs, zero points are defined.
	2	Defines manufacturing processes and operations. Learns to select cutting tools for each operation and determines cutting parameters.
	3	Learn CNC lathes and programming
	4	Learn CNC milling machines and programming
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Principles of machining and manufacturing methods	Implementation of manufacturing methods and processes on simulation machine tools
2	Features and parts of CNC lathe	CNC Lathe Simulation and its application on the lathe
3	Control panel types, keys and features	CNC Lathe Simulation and its application on the lathe
4	Cutter types, features and places of use	CNC Lathe Simulation and its application on the lathe

5	Programming principles in CNC lathes	CNC Lathe Simulation and its application on the lathe
6	Motion and coordinate systems in CNC lathes	CNC Lathe Simulation and its application on the lathe
7	Linear and circular cutting in CNC lathe, writing programs with cycles	CNC Lathe Simulation and its application on the lathe
8	Programming principles in CNC milling machines	CNC Milling Simulation and its application on the machine
9	Cutting tools and cutting parameters	CNC Milling Simulation and its application on the machine
10	Programming principles in CNC milling machines	CNC Milling Simulation and its application on the machine
11	Coordinate types and entries	CNC Milling Simulation and its application on the machine
12	M-G Codes and program writing	CNC Milling Simulation and its application on the machine
13	Cycle and program structure	CNC Milling Simulation and its application on the machine
14	Subprogram writing	CNC Milling Simulation and its application on the machine

22	Textbooks, References and/or Other Materials:	1-CNC milling operation manual book, 2-CNC milling usage manual book, 3-CNC Milling machine 4-Course notes 5-Gülesin, M., Güllü, A., Avcı, Ö., Akdoğan, G., "CNC Torna ve Freze Tezgahlarının Programlanması", Asil Yayın Dağıtım, Ankara, 2008.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
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		Measurement and evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	1.00	14.00
Self study and preperation	8	1.00	8.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	1.00	1.00
Others	0	0.00	0.00
Final Exams	1	5.00	5.00
Total Work Load			56.00
Total work load/ 30 hr			1.87
ECTS Credit of the Course			2.00

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	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	4	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**