

INTRODUCTION TO COMPUTER AIDED DESIGN

1	Course Title:	INTRODUCTION TO COMPUTER AIDED DESIGN	
2	Course Code:	MAK4103	
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):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	2	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. NECMETTİN KAYA	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	necmi@uludag.edu.tr 224-2941979 U.Ü. Müh. Mim. Fak., Makine Mühendisliği Bölümü Bursa	
17	Website:	http://homepage.uludag.edu.tr/~necmi/bdtg.htm	
18	Objective of the Course:	The aim of this course is to provide students with the knowledge of the methodology and application of computer aided design systems in engineering area. Students will learn the fundamentals of computer based design and how to apply CAD concepts in mechanical engineering design problems, how to manage the machine design projects and have the practical experience to meet the expectations of industry	
19	Contribution of the Course to Professional Development:	The skills of understanding and modeling computer aided design concepts are gained.	
20	Learning Outcomes:		
		1	Understand the concepts and techniques of CAD
		2	Be able to use the computer aided design techniques in machine design problems
		3	Ability to interpret within the framework of the main issues in mechanical engineering using the results of CAD work
		4	Be able to work in teams and learn how to take different roles in team work and share the work with team mates
		5	Be able to prepare and present the projects
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	

1	Introduction, lecture plan, fundamental definitions (CAD/CAM/CAE/CE), (CATIA Lab: Sketch drawing)			
2	CAD file exchange specifications, computer aided mechanical design process (CATIA Lab: Sketch drawing)			
3	Constraints of sketch, fundamentals of solid modeling, (CATIA Lab: Solid modeling)			
4	Constraints of sketch, solid modeling, (CATIA Lab: Solid modeling)			
5	Assembly modeling, (CATIA Lab: Assembly modeling)			
6	Fundamentals curve modeling, (CATIA Lab: Assembly modeling)			
7	Fundamentals of surface modeling, (CATIA Lab: surface modeling)			
8	Design of manufacturing and assembly, (UG Lab: Sketch drawing)			
9	Repeating courses and midterm exam			
10	Reverse engineering, rapid prototyping, (NX Lab: Solid Modeling)			
11	Design for six sigma (NX Lab: Solid Modeling)			
12	Theory of Inventive Problem Solving (TRIZ) (NX Lab: Assembly Modeling)			
13	Design of Experiment (NX Lab: Surface Modeling)			
Activites		Number	Duration (hour)	Total Work Load (hour)
22	Textbooks, References and/or Other Materials:	1. Lecture Notes	2.00	28.00
		2. CATIA V5R15 ile Modelleme, Ahmet Özdemir, Zafer	2.00	28.00
Practicals/Labs		14	2.00	28.00
Self study and preperation		3. Unigraphics NX ile Modelleme, Mahmut Gülesin, Abdülkadir Güllü, İbrahim Ufuk Asil Yavuz Dağıtım	2.00	28.00
Homeworks		1	2.00	2.00
Projects		5. http://nxtutorials.com (Siemens NX)	15.00	15.00
Field Studies		6. http://academy.3ds.com (Dassault CATIA)	0.00	0.00
Midterm exams		7. edition (Student version)	10.00	10.00
Others		8. Youtube videos	0.00	0.00
Final Exams		1	15.00	15.00
23	Assessment			
Total Work Load				126.00
TERM LEARNING ACTIVITIES		NUMBER	WEIGHT	
Total work load/ 30 hr				4.20
ECTS Credit of the Course				4.00
Quiz		0	0.00	
Home work-project		1	25.00	
Final Exam		1	50.00	
Total		3	100.00	
Contribution of Term (Year) Learning Activities to Success Grade		50.00		
Contribution of Final Exam to Success Grade		50.00		
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			

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	5	4	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	5	4	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	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			