	INTRODUCTION	TO FI	NITE ELEMENT METHOD							
1	Course Title:	INTROD	INTRODUCTION TO FINITE ELEMENT METHOD							
2	Course Code:	MAK4114								
3	Type of Course:	Optional								
4	Level of Course:	First Cyc	le							
5	Year of Study:	4								
6	Semester:	8								
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 f	ace							
14	Course Coordinator:	Prof. Dr.	NECMETTIN 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\bdm.htm								
18	Objective of the Course:	The aim of this course is to provide students with the knowledge of computer aided techniques in engineering area. Students will learn the fundamentals of computer based applications, how to apply CAE concepts in mechanical engineering design problems and have the theoretical knowledge and practical experience to meet the expectations of industry regarding CAE techniques.								
19	Contribution of the Course to Professional Development:									
20	Learning Outcomes:									
		1	Understand the concepts of CAE regarding theoretical knowledge, be able to apply CAE techniques to design and design evaluation phases							
		2	Learn the fundamentals of finite element method and be able to use it to stress and deflection analysis of machine design problems using CAE techniques							
		3	Learn the fundamentals of computer aided optimum design techniques and be able to use CAE techniques for the optimization of machine components							
		4	Be able to prepare projects and be able to work in teams and learn how to take different roles in team work and share the knowledge with team mates							
		5	Be able to prepare and present the CAE projects							
		6								
		7								
		8								
		9								
		10								
21	Course Content:									
		Co	ourse Content:							

Week	The	Theoretical								Practice										
1	Introduction, lecture plan, computer laboratory rules and information about softwares.																			
2	Intro	Introduction to FEM																		
3	1D E	leme	ents																	
4	Trus	s Ele	ement	S																
5	Bear	m Ele	ement	s																
6	Two	dime	ensior	al FE	probl	ems														
7	Thre	e dir	nensio	onal n	online	ar FE p	oroble	ms												
8	Dyna	amic	s Ana	lysis																
9	Heat	t Trai	nsfer /	Analys	sis															
10	CFD	Ana	lysis																	
11	Buck	kling	Analy	sis																
12	Expl	icit D	ynam	ics																
13	Fatig	Fatigue Analysis																		
14	Торо	ology	Optir	nizatio	n															
22	Text Mate	book erials	s, Rei :	ferenc	es an	d/or Ot	ther		1. W(2. Jol	 Basics of the Finite Element Method, Paul E. Allaire, WCB Publishers. The Engineering Design Process, A .Ertaş, J. J. Jones, John Wiley & Sons 										
Activites							1	Numb	er		Dura	Duration (hour)			Total Work Load (hour)					
Theore	neoretical R									14			2.00			28.00				
Practica	racticals/Labs								1	14			2.00			28.00				
Seli Zstu	Study and preperation 0									094				2.00			28.00			
Homew	Homeworks									1				3.00			3.00			
Piropelet	ingetexam 1									50100				10.00			10.00			
Field S	Field Studies									0				0.00			0.00			
Olicotterito	Okodteriboutexation/sTerm (Year) Learning Activities to									50100				10.00			10.00			
Others	Others									0			0.00	0.00			0.00			
Finatrie	natribution of Final Exam to Success Grade									50,00			15.00	15.00			15.00			
Total W	Total Work Load															122.00				
Mataswerkeonadh 30Evaluation Techniques Used in the									ne						4	4.07				
ECTS Credit of the Course												4.00								
	1-01											OME								
								(QUA			NS	5 10 1							
	I	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16			
ÖK1	(C	0	5	4	0	0	0	0	0	0	0	0	0	0	0	0			
ÖK2	(C	3	3	0	0	0	2	0	0	0	0	0	0	0	0	0			
ÖK3	(C	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0			
ÖK4	(C	0	0	0	0	0	5	4	0	0	0	0	0	0	0	0			

ÖK5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib 1 very low ution Level:				2 low			3 Medium			4 High			5 Very High			