MENG303 – Principles of Computer Aided Engineering											
Eastern Mediterranean University											
Faculty of Engineering											
De	Department: Mechanical Engineering										
Pr Co	ogram Code: 23	<b>Program:</b> Mechanical Engineerin	ig Year/Se	Year/Semester: 2020-2021 FALL							
	FNG303	Principles of Computer Aided	Loo	Log Tut/Lob							
1,11		Engineering	<u> </u>	10	3	<u>10tai</u>					
Categorization of Course:				Categorization of Credits:							
$\boxtimes$	Engineering or Are	ea Core	a.Mathe	a. Mathematics & Basic Science:							
	Engineering Cours	e offered by other programs	b. <b>Engin</b>	b.Engineering Topics:							
Engineering Area Elective			c.Genera	c.General Education:							
	Mathematics and H	Basic Sciences	d.Major	d.Major Engineering Design:							
General Education											
Ins	structor Name: As	soc. Prof. Dr. Qasim Zeeshan	Office n	<b>o:</b> ME141	Office Tel: 6	5301361					
Course Web Page: https://staff.emu.edu.tr/qasimzeeshan/en/teaching/meng-303											
Textbook(s): David G. ULLMAN, The Mechanical Design Process, 4th edition, Mc Graw Hill, 2010											
Ca	talog Description	: Design Process, Engineering	Specificatio	ns, Projec	t Planning, O	Concept					
Generation, Evaluation & Selection, Material and Process Selection, Design for Manufacturability and											
As	sembly, Design to	r Cost, Design for Environment,	Design for I	Reliability,	Design for T	est and					
Maintenance, Human Factors in Design, CAD Modeling and Analysis.											
Prerequisite(s) MENG104											
Type of Course Kequired Selected Elective											
Student Outcomes											
1	1 an ability to identify, formulate, and solve complex engineering problems by applying										
principles of engineering, science, and mathematics											
2	an ability to apply engineering design to produce solutions that meet specified needs with										
	consideration of public nealth, safety, and welfare, as well as global, cultural, social, environmental and economic factors										
	environmental, and economic factors										
3	an ability to communicate effectively with a range of audiences										
4	an ability to recognize ethical and professional responsibilities in engineering situations and										
	make informed judgments, which must consider the impact of engineering solutions in global,										
	economic, environmental, and societal contexts										
5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives										
6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and $\sum$										
	use engineering ju										
7	on obility to accrit	and apply new knowledge as read	ad using are	ronmiata 1-	omina strata						
/	an ability to acqui	e and apply new knowledge as need	eu, using app	nopriate le	arning strategi						

Course Learning Outcomes				Student						Aggaggment and		
				Outcomes						Assessment anu Percentages		
			1	2	3	4	5	6	7	1 er centages	•	
1	Modeling assemblies	odeling and analysis of mechanical parts and semblies in CAD software		x				X				
2	Understand the fundamentals of mechanical design			X								
3	Define des	sign objectives, design constraints and										
	product sp	becifications according to the stakeholder		Х			Х			M: 14		
	and project	et requirements.								Theory	10%	
4	Collect an	d review related data such as technical								Lab	10%	
	informatio	on, regulations, and standards etc. from		Х			X		X	Luo	1070	
credible literatu		terature resources to generate solutions.								Final Examinati	ion	
5 Manage c		oncept generation, evaluation & selection		x			X			(Theory)	20%	
	process.									(Lab)	20%	
0	Develop a	an effective design strategy and project plan		X			X				10.04	
7										Design Project	40%	
<i>'</i>	Design a s	system to meet the design criteria and								* Project is group	h	
	availabilit	v. environment, sustainability, safety.	x	x		x	x			submissions.		
	manufactu	urability, assembly, reliability, testing and								however, viva vo	oce/	
	maintenan	maintenance, and product life cycle considerations).								oral examination	will	
8	Develop d	etailed manufacturing/ simulation / testing					<b>W</b> 7			be conducted for	each	
plan				Х			Х			group member		
9 Develop a		testing plan for verification and validation		X			X	X		Indivually during	the	
10	Understan	d the significance of relevant engineering								Project Presentati	ions.	
	standards	for materials, components, manufacturing		Х			Х					
and produ		ct qualification										
11	Understan	d the major characteristics of engineering										
drawings		and generate engineering drawings		x			x					
according		to the technical drawing standards (layout,										
		urawing, parts urawings, etc.)		v	v	v	v					
12 Manage de		ight of Student Outcomes	т	л Ц	A I	А Т	л П	T	т			
	/oage weight of Student Outcomes		L		L.			L		• • •		
	opics Cover	Process		Introduction to CAD Modeling								
	eek 1	Understanding Machanical Design		Sketch antitias and tools								
W	ook 3	Designer and Design Teams			art <sup>:</sup>	$\frac{1}{M_0}$	del	ino	5 al.			
Week 4		Engineering Specifications			Part Modeling							
Week 5		Planning for Design		Threads and Fasteners								
Week 6		Concept Generation		G	ear	s	un	uı				
Week 7		Concept Evaluation and Selection		Spring and Keys								
Week 8		Midterm Examination		Midterm Lab Exam								
Week 9		Product Generation		Assemblies								
Week 10		Design for Cost		Assemblies								
Week 11		Design for Manufacturing		Assemblies								
Week 12		Design for Assembly		Analysis of mechanical parts								
Week 13		Design for Reliability, Test & Maintenance		Analysis of mechanical parts								
Week 14		Design for Environment and End of Life		Analysis of mechanical parts								
Week 15		Revision			Final Lab Exam							
Week 16		Final Theory Examination			Final Lab Exam							

**Important Notes Regarding the Course:** University rules and regulations are applied to this course. For details, please see <u>http://mevzuat.emu.edu.tr</u>

## Exam and Quiz Policy:

The midterm and final exams are OPEN book in Case of Online Teaching.

## Makeups:

- 1. There is no make-up or resit for the Labs and Lab Exams.
- 2. A student who fails to sit for an examination for a valid reason is given a make-up exam. Within three working days after the examination, students who wish to take a make-up must submit a **written statement** to the course instructor explaining the reason(s) for his/her request.
- 3. Eligibility to take a Make-Up Exam:
  - a. Student must contact the Instructor immediately within "**three working days**" after the examination when (s)he has missed the mid-term exam or final exam and to discuss with the faculty about the date and time to take the make-up exam.
  - b. Student must secure a "**Make-Up Exam Form**" from the department Office or from instructor website & fill-out the Form. For each Make-Up Exam, please use separate Form.
  - c. Student must secure the approval from the instructor for taking the Make-Up Exam.
  - d. Failure to take the Make-Up Exam at the agreed date and time will lead to a "NG" Grade for the Make-Up Exam, midterm or final.

## NG Policy:

- 1. "NG" Nil Grade/ Failing from Absenteeism: Students who do not comply with the required level attendance and/or not fulfilling the requirements for the evaluation of the course are given the "NG" grade by the Instructor of the Course based on the criteria determined by the Faculty/School Academic Council. Students are informed about the criteria for receiving the "NG" grade by the related course instructor at the beginning of the semester. "NG" grade is included in the computation of GPA and CGPA.
- 2. Student attendance is monitored and assessed by the course instructor. A student who fails to meet the requirements of a course or who is absent more than the limit specified by the Faculty is considered to be unsuccessful in that course.
- 3. Students who do not attend any of the above assessment activities (such as mid-term exam, final exam, lab exam, design project report etc.) will be given NG (Nil Grade).
- 4. Late Submissions of the Assignments, Lab Reports and Project will be graded as zero.

## Appeals:

Any appeal against the marks of any assessment component must be made to the course instructor within one week following the announcement of the marks. Any appeal concerning a semester grade must be made to the course instructor no later than the end of the registration period of the following semester.