



The University of Jordan
School of Engineering
Industrial Engineering Department
Fall 2018/2019

Course name:	Design for Manufacturing		
Course code:	0906578		
Credits hours	3		
Contact hours&room\office hours:	Sun/Tue/Thu 10:00-11:00, Room IE101 \ 11:00-12:00 Sun.\Tue.		
Course instructor's name, E-mail, and phone:	Belal Gharaibeh		
	b.gharaibeh@ju.edu.jo		
	22639		
Course Coordinator:	Belal Gharaibeh		
Text book:	Boothroyd, G., (1994), Product Design for Manufacture and Assembly I. Gibson, D. Rosen, B. Stucker, (2015), Additive Manufacturing Technologies, Springer 2 nd edition. Handbook of Product Design for Manufacturing; Ed. James g. Bralla		
Other reference(s):			
Course Description:	3 Credit hours (3 h lectures). Material and process selection, design for manufacture in forming processes, DFM in casting processes. Design for assembly.		
Providing Department:	Industrial Engineering		
Prerequisite Course:	0906411 Manufacturing Processes-2/metal cutting		
Course type	Elective		
Assessment Methods:	Method	Weight %	Date
	Mid Exam	30	
	Projects	30	
	Final Exam	40	
Course Learning Outcomes:	#	After successful completion of this course, the student will be able to	SO
	CLO1	Be able to design for assembly	C
	CLO2	Be able to design for manufacturing	C, k
	CLO3	Gain knowledge of additive manufacturing processes	I
	CLO4	Be able to design for additive manufacturing	C, K
Brief list of topics	Week #	Topic	
	1	1-Introduction to the course building teams Project 1 tutorials	
	2	Principles of DFA (textbook 1)	
	3-	In class work to identify DFA features/per student in a group	
	4	Design for machining (injection molding design) (Textbook 1)	
	5	Design for machining (injection molding design) (Textbook 1)	
	6	Introduction and basic principles of AM & extrusion-based systems (textbook 2)	
	7	direct digital manufacturing DDM & cost estimation	
	8-9	direct digital manufacturing DDM & cost estimation	
	10-11	design for additive manufacturing	
	11-12	design for additive manufacturing	
	13-14	Finalizing printed parts (postprocessing and measurements)	
15	Project presentations		
Important Notes:	<ul style="list-style-type: none"> • Do not hesitate to ask questions • You are required to bring a notebook and take notes in classes. 		

	<ul style="list-style-type: none"> • Students are expected to attend every class session and they are responsible for all material, announcements, schedule changes, etc., discussed in class. • Discuss the assignments among yourselves • Don't Cheat; direct copying of others work will NOT be allowed or tolerated and will result in a reduction of grade. If you are found to be cheating in any way, on an exam or assignment, even signing the roll sheet for another student, you will be given an "F" for the course. There will be no exceptions. • All cases of academic dishonesty will be handled in accordance with university policies and regulations. JU policy requires the faculty member to assign ZERO grade (F) if a student misses 15% of the classes that are not excused, and 20% of the classes that are excused • Students are expected to be ready to take a quiz any time they have a class. There will be no make-up quizzes or home works. • Any students with disabilities who need accommodations in this course are encouraged to speak with the instructor as soon as possible to make appropriate arrangements for these accommodations.
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The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)

a	<i>An ability to apply knowledge of mathematics, science and engineering.</i>	g	<i>An ability to communicate effectively.</i>
b	<i>An ability to design and conduct experiments, as well as to analyze and interpret data.</i>	h	<i>An ability to understand the impact of engineering solutions in a global, economic, environmental and societal context.</i>
c	<i>An ability to design a system, component, or process to meet desired needs within realistic constraints.</i>	i	<i>An ability to engage in life-long learning.</i>
d	<i>An ability to function productively as part of multidisciplinary teams and show leadership qualities.</i>	j	<i>An ability to acknowledge contemporary issues related to the discipline.</i>
e	<i>An ability to identify, formulate and solve engineering problems.</i>	k	<i>An ability to use techniques, skills and modern engineering tools necessary for engineering practice.</i>
f	<i>An ability to understand professional and ethical responsibilities.</i>		