



The University of Jordan
School of Engineering
Industrial Engineering Department
Fall 2019/2020

Course name:	Design for Manufacturing			
Course code:	0906578			
Credits hours	3			
Contact hours&room\office hours:	Mon./Wed. 9:30-11:00, Room A106/ O.H. 11:00-12:00 Mon/Wed.			
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	20		
	Final Exam	50		
Course Learning Outcomes:	#	After successful completion of this course, the student will be able to	SO	
	CLO1	Be able to design for assembly	2	
	CLO2	Be able to design for manufacturing	2	
	CLO3	Gain knowledge of additive manufacturing processes (new casting process)	7	
	CLO4	Be able to design for additive manufacturing	2	
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 DDD		
	8-9	direct digital manufacturing DDM		
	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)

1	<i>an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics</i>	6	<i>an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions</i>
2	<i>an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors</i>	7	<i>an ability to acquire and apply new knowledge as needed, using appropriate learning strategies</i>
3	<i>an ability to communicate effectively with a range of audiences</i>		
4	<i>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</i>		
5	<i>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</i>		