



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

Course name:	Composite materials and powder technology		
Course code:	IE 0936577		
Credits hours	3		
Contact hours& room\office hours	12:00-13:00 Sunday, Tuesday, and Thursday		
Course instructor's name, E-mail, and phone:	Assoc. Prof. Sa'ed A. Musmar		
	s.musmar@ju.edu.jo		
	5355000 ext. 22930		
Course Coordinator:	NA		
Text book:	An introduction to composite materials, D. Hull and T.W. Cylne Cambridge university Press		
Other reference(s):	1. R. Johnes, Mechanics of composite 2.G.S. Upadhyaya, Powder Metallurgy technology		
Course Description:	Classification of composite materials, hardening, metallic matrix, polymer matrix, ceramic matrix, Powder technology, powder manufacture.		
Providing Department:	Industrial Engineering		
Prerequisite Course:	Properties of Engineering Materials (IE 0936273)		
Course type	Elective		
Assessment Methods:	Method	Weight %	Date
	Exam	20	
	Mid Exam	30	
	Final Exam	50	
Course Learning Outcomes:	#	After successful completion of this course, the student will be able to	SO
	CLO1	1. Be aware of industrial applications of composite materials	4
	CLO2	Understand the various manufacturing processes	1
	CLO3	The ability to select proper composite system for a specific product; selection of matrix and reinforcement phases and predict their quantities. Polymer, metal and ceramic materials as matrix and/or reinforcement phase.	1
Brief list of topics	Week #	Topic	
	1	Introduction.	
	2	Classification of composite materials	

	3-7	Polymer matrix composite
	8	Introduction to powder technology
	9-10	Metal matrix composites and their applications
	11	Ceramic matrix composites and their applications
	12-14	Prediction of mechanical property (strength of material, and half-tsi approaches)
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. • 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. 	
<i>The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)</i>		
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 health, safety, and welfare, as well as global, cultural, social, 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 use engineering judgment to draw conclusions	
7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	