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

Course name:	**Materials Testing**			
Course code:	IE 0906576			
Credits hours	3			
Contact hours& room\office hours:	1:15 for days week at IE 101			
Course instructor's name, E-mail, and phone:	Belal Gharaibeh b.gharaibeh@ju.edu.jo 22939			
Course Coordinator:	Belal Gharaibeh			
Text book:	Neutrons and Synchrotron Radiation in Engineering Materials Science, Walter Reimers, 2008 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim			
Other reference(s):	Non Destructive Handbook, Edited by R. C. McMaster, The Ronald Press Company, 1959.			
Course Description:	Data collection, error analysis. Tension tests, bending tests, hardness tests, strain, nondestructive testing, ultrasonic testing, electrical testing, radiation testing.			
Providing Department:	Industrial Engineering			
Prerequisite Course:	0906411 Manufacturing Processes-2/metal cutting			
Course type	Elective			
Assessment Methods:	Method	Weight %	Date	
	Mid Exam	30		
	Project	30		
	Final Exam	40		
Course Learning Outcomes:	#	After successful completion of this course, the student will be able to	SO	
	CLO1	Understand the fundamentals of defect analysis	e	
	CLO2	Classifications of Non-Destructive Testing	e	
	CLO3	Learn how neutron and synchrotron tomography works	K	
	CLO4	Practice 2D image processing techniques	K	

Brief list of topics	Week #	Topic
	1-3	Introduction to NDT and defectology and probability of detection
	4,5	Ultrasound and radiography NDT methods
	6-9	Introduction to neutron and synchrotron micro tomography methods

Important Notes:	• 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.	

The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)

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