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

Course name:	Plastic Engineering
Course code:	0906573
Credits hours	3
Contact hours/room:	9:00 – 10:00 Sun , 11:00-12:00 Tue,
Course instructor's name, E-mail, and phone:	Walid Khraisat, Ph.D. w.khraisat@ju.edu.jo 22872
Course Coordinator:	Walid Khraisat, Ph.D.
Text book:	Materials Science of Polymers for Engineers, Author: Osswald, Tim A. and Menges, Georg Edition: 3rd Edition Year: 2012
Other reference(s):	Handouts and notes that will be provided by the instructor
Course Description:	Polymeric materials. Polymer microstructures, mechanical, chemical and physical properties, thermoplastic, thermoset, and elastomeric materials, polymer processing and molds, designing with plastics
Providing Department:	Industrial Engineering
Prerequisite Course:	0906273 Properties of Eng. Materials
Course type	Elective

Assessment Methods:

Method	Weight %	Date
Mid-term Exam	30	
Project work	15	N/A
Quizzes	5	
Final Exam	50	TBD

Course Learning Outcomes:

#	After successful completion of this course, the student will be able to	SO
CLO1	• Understand the relation between polymer structure and mechanical and reological properties	**1,2**
CLO2	• Apply the theory of engineering Polymers to engineering problems	**2**
CLO3	• Understand general polymer structure and mechanical properties and be able to characterize them	**1**
CLO4	• Polymer main Manufacturing processes	**2**
CLO5	• Understand the impact of polymeric material on the environment	**2**
CLO6	• Enhance their presentation and information seeking skills	**3,5**

Brief list of topics

# of Weeks	Reading Material	Topic
1	Ch1 – text	Introduction to Polymeric materials

	2	Ch3 - text	Structure of polymers Polymer microstructures, chemical and physical properties
	2	Ch8-text	Solidification of Polymers (thermoplastic, thermoset, and elastomeric materials)
	2	Ch9 - text	Mechanical Properties of Polymer
	2	Ch5 – text	Rheology of Polymer Melts
	3	Ch6 - text	polymer processing and molds
	2	Handouts	-Transfer molding -Rotational molding - Thermoforming - designing with plastics
Important Notes:	• Class-notes, in-class drills and any handout you receive from the instructor are required as part of the course. • Passing grade must earn in all the components (Lectures and Project) of this class. • Prompt, regular attendance is necessary for the lecture, and the exams. There is no makeup for the Midterm exam, missing them will give you zero grade. • Any students needing assistance because of any disabilities must notify the instructor, and follow established university procedures. *Cheating and Honor Code* • Any student caught cheating, or helping someone cheat, will be reported to the Dean Council • Plagiarism on the mini project constitutes cheating in this course		

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