



**The University of Jordan**  
**School of Engineering**  
**Industrial Engineering Department**  
**2<sup>nd</sup> Semester 2020/2021**

<b>Course name:</b>	Manufacturing Processes Lab.			
<b>Course code:</b>	IE 0916515			
<b>Credits hours</b>	1hr.			
<b>Contact hours:</b>	3hr. per week			
<b>Course instructor's name, E-mail, and phone:</b>	Prof. Dr. Mohammad D. AL-Tahat			
	altahat@ju.edu.jo			
	Phone: 22930			
<b>Course Coordinator:</b>				
<b>Text book:</b>	Manufacturing Engineering & Technology, 7 <sup>th</sup> Edition, by Serope Kalpakjian and Steven Schmid (2016). Prentice Hall.			
<b>Other reference(s):</b>	<ul style="list-style-type: none"> <li>• Instructor's notes and Lab. sheets</li> <li>• Manufacturing Engineering and Technology, 6th edition. Serope Kalpakjian and Steven Schmid (2010). Prentice Hall.</li> </ul>			
<b>Course Description:</b>	Laboratory experiments in the practice and analysis of some formation, machining, casting, and welding operations. Linking the variables involved in the operations with the characteristics and quality of the products. Monitor the effects of machines and tools on quality of the final products, and the behavior of products during operations.			
<b>Providing Department:</b>	Industrial Engineering			
<b>Prerequisite Course:</b>	IE 0946513			
<b>Course type</b>	Required (Mandatory)			
<b>Assessment Methods:</b>	<b>Method</b>	<b>Weight %</b>	<b>Date</b>	
	Reports	<b>20</b>		
	Mid Exam	<b>30</b>		
	Projects and or Quizzes	<b>10</b>		
	Final Exam	<b>40</b>		
<b>Course Learning Outcomes:</b>	<b>#</b>	<b>After successful completion of this course, the student will be able to</b>	<b>Mapping with SOs</b>	<b>Target %</b>
	<b>CLO1</b>	Understand mechanical behavior of materials under forming operations, and testing for their properties	<b>1</b>	Final
	<b>CLO2</b>	Describe the most common aspects of some metallurgical processes like casting or welding technology	<b>7</b>	Final
	<b>CLO3</b>	Integrate some variables of machining processes with product quality	<b>7</b>	Final
	<b>CLO4</b>	Design and conduct experiments, as well as to analyze and interpret data.	<b>6</b>	Final

<b>Brief list of topics</b>	<b>Week #</b>	<b>Topic</b>
	1	General Course Orientation
	2	Workshop and related-Labs visits.
	3-4	Properties and mechanical behavior of materials.
	5-8	Material hardness, and Jominy test of hardenability
	9-11	Casting and welding technology
	12-14	Effects of cutting conditions on surface roughness of metals
	15-16	Assessments and evaluation

  

<b>Important Notes:</b>	
	<ul style="list-style-type: none"> <li>• Do not hesitate to ask questions</li> <li>• You are required to bring a notebook and take notes in classes.</li> <li>• Students are expected to attend every class session and they are responsible for all material, announcements, schedule changes, etc., discussed in class.</li> <li>• Discuss the assignments among yourselves</li> <li>• 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.</li> <li>• 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</li> <li>• 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.</li> <li>• 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.</li> </ul>

<b><i>The B.Sc. in industrial Engineering program enables students to achieve, by the time of graduation the following program learning outcome (SOs)</i></b>			
<b>1</b>	<b><i>An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics</i></b>	<b>5</b>	<b><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></b>
<b>2</b>	<b><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></b>	<b>6</b>	<b><i>An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions</i></b>
<b>3</b>	<b><i>An ability to communicate effectively with a range of audiences</i></b>	<b>7</b>	<b><i>An ability to acquire and apply new knowledge as needed, using appropriate learning strategies</i></b>
<b>4</b>	<b><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></b>		