



**Jordan University of Science and Technology**  
**Faculty of Engineering**  
**Industrial Engineering Department**

IE366 Manufacturing Processes (1) - JNQF Level: 7

Second Semester 2023-2024

**Course Catalog**

3 Credit Hours. Introduction to manufacturing processes with a focus on ferrous and non-ferrous metals, metal casting, rolling, forging, extrusion, drawing, machining.

**Teaching Method:** Blended

**Text Book**

<b>Title</b>	Manufacturing Engineering and Technology SI of 7th revised edition, 2013
<b>Author(s)</b>	Kalpakjian, Serope, Schmid, Stephen R.
<b>Edition</b>	7th Edition
<b>Short Name</b>	1
<b>Other Information</b>	

**Instructor**

Name	<b>Prof. Mohammed Taiseer Hayajneh</b>
Office Location	M5L3
Office Hours	
Email	hayajneh@just.edu.jo

**Class Schedule & Room**

Section 1:  
Lecture Time: Mon : 10:00 - 11:30  
Room: قاعة الفعاليات

Section 2:  
Lecture Time: Wed : 10:00 - 11:30  
Room: قاعة الفعاليات

### Prerequisites

Line Number	Course Name	Prerequisite Type
293630	IE363 Engineering Materials	Prerequisite / Study
293350	IE335 Engineering Measurements Lab	Prerequisite / Study

### Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Part I: General Introduction	From 1
Weeks 3, 4	Chapter 15: Ferrous Metals and Alloys: Production, General Properties and Applications	From 1
Weeks 5, 6	Chapter 6: Nonferrous Metals and Alloys: Production, General Properties, and Applications	From 1
Weeks 7, 8	Chapter 11: Metal-Casting Processes	From 1
Weeks 9, 10	Chapter 13: Rolling of Metals	From 1
Weeks 11, 12	Chapter 14: Forging of Metals	From 1
Week 13	Chapter 15: Extrusion and Drawing of Metals	From 1
Weeks 14, 15, 16	Chapters(27, 28, 29): Machining	From 1

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understand and appreciate the topic of Manufacturing Processes and its various aspects. [1SO1] [1L7K1]	30%	
Identify the different types of ferrous alloys and nonferrous metals and alloys, their properties and applications. [1SO1, 1SO2] [1L7K1]	30%	

Analyze the metal casting, rolling, forging, extrusion, drawing , machining and rapid prototyping manufacturing processes in terms of: processing steps, techniques, identifying the engineering knowledge required, recalling specific design for manufacture guidelines equipment, applications, capabilities, limitations and describing recent developments. [1SO1, 1SO2] [1L7S1]	40%	
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Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
65	35					

Relationship to NQF Outcomes (Out of 100%)	
L7K1	L7S1
60	40

Evaluation	
Assessment Tool	Weight
med	30%
quizzes	20%
final	50%

Policy	
Lecture presentation	<ul style="list-style-type: none"> <li>-The teaching method that will be used in this course will be composed of a series of mini-lectures interrupted with frequent discussions and brainstorming exercises.</li> <li>-PowerPoint presentations will be prepared for the course materials.</li> <li>- A typical lecture would start with a short review (~ 5 minutes) using PowerPoint presentations. This review will also depend on discussions that will gauge the students? digestion of the previous material. Then, the students would have a lecture on new materials using PowerPoint presentations.</li> <li>-The lecture presentation will be paused every nearly 15 minutes with brainstorming questions and discussions that will allow the students to reflect and think in more depth about what they learned in that presentation.</li> <li>-The lecture will be continued for another 15 minutes.</li> </ul>
Attendance	Attendance will be checked at the beginning of each class. University regulations will be strictly followed for students exceeding the maximum number of absences.
Student Conduct	It is the responsibility of each student to adhere to the principles of academic integrity. Academic integrity means that a student is honest with him/herself, fellow students, instructors, and the University in matters concerning his or her educational endeavors. Cheating will not be tolerated in this course. University regulations will be pursued and enforced on any cheating student.

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