The Hashemite University
Faculty of Engineering
Course Syllabus

Course Title:	Materials Engineering and Manufacturing Technology	**Course Number:**	110403363
Department:	Industrial Engineering	**Designation:**	Compulsory
Prerequisite(s):			
Instructor:	Dr. Morad Etier	**Instructor's Office:**	E3087
Instructor's e-mail:	morad.etier@hu.edu.jo		
Office Hours:	Sun. – Wed., 19:00-20:00		
Time:	Sun. and Tues. 10:00 – 11:00	**Class Room:**	Online/Ms-Teams
Course description:	This is an introductory course in engineering materials and manufacturing technology, which deals with atomic structure and bonding, structure of crystalline solids, imperfection in solid, dislocations and strengthening mechanisms as well as the manufacturing and processing technologies such as rapid prototyping techniques, bulk deformation processes in Metalworking (Forging, Rolling, Extrusion and drawing), material removal processes and powder technology.		
Textbook(s):	1. An Introduction to Materials Science and Engineering. D. Callister, Jr., 8th Edition, John Wiley & Sons, 2010 or Newer edition. 2. Kalpakjian S., and Schmid S. 2010. Manufacturing Engineering and Technology. Sixth edition. Pearson Printice Hall.		
Other required material:	- Additional handouts will be given through semester.		
Course objectives:	• Understand the basic classifications, bond and structures of the most industrial important materials. • To be able to discuss/explain the importance of the mechanical behavior of materials in manufacturing. • To be able to analyze the different bulk deformation processes and identify their advantages and disadvantages. • To be able to correlate material properties with manufacturing processes		
Topics covered:	1. Introduction to material science and engineering materials 2. Crystalline structure 3. Elastic behavior 4. Dislocations and plasticity in metals 5. Introduction to manufacturing processes. 6. Rapid prototyping techniques 7. Powder technology 8. Forming, shaping processes and equipment 9. Machining process and machine tools.		
Class schedule:	Two Sessions per week; 60 minutes each.		
Grading Policy:	Midterm Exam (30 Points) Sunday. 25.4.2021 Quizzes, attendance and projects (20 Points) Final Exam (50 Points) Will be appointed later		
General Notes:	- Exams are closed books and notes. - Attendance is mandatory. No more than 15% no excuse absent is permitted.		
ABET, Measured outcomes	a,e,k		