

Course Number: 28537
Course Name: METAL FORMING

Course Type: Theory & applied
Prerequisite: Nothing.
Level: Graduate
Group: Applied Mechanic

Type & Max Unit: Constant 3
Corequisite : Nothing.
First Presentation: 1997-1
Last Edition: 2017-1

Objectives:

The main objective of this course is to present the basic principles of Metal Forming containing the mechanical properties of metals, different processes of forming and to some extent analysis of mechanical deformations. Also In some cases, computer simulation and physical modeling are used as the laboratory works.

Topics:

- Mechanical Behavior of Metals.
- Basic Rules in Engineering Plasticity and Metal Forming Analysis.
- Mechanical and Hydraulic Press Characteristics.
- Temperature Estimations in Metal Forming.
- FORGING.
- EXTRUSION.
- ROLLING.
- DRAWING.
- Sheet Forming (Shearing, Bending, Deep Drawing).
- Computer Simulations.

Text: Methods and Mechanics of Metal Forming

By: A. Assempour & S. N. Olaghi

References:

- 1- Engineering Plasticity By W. Johnson, P.B. Mellor
- 2- Deformation Processing By W.A. Backofen
- 3- Manufacturing Processes for Engineering Materials. By Serope Kalpakjian
- 4- Forming Technologies Training Manual.
- 5- Standard ASTM E 8M-95a; Standard Test Methods for Tension Testing of Metallic Materials.
- 6- Metals Handbook Ninth Edition Volume 14 Forming And Forging
- 7- Metal Forming Mechanics & Metalurgy By W.F. Hossford & R. M. Caddel
- 8- Metal Forming: Fundamental & Applications By Altan &, OH & Gegal

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