

PRESS WORKING DIES (Stamping Dies)

Course Code:28232Credits:3Course Type:Applied & TheoreticalPrerequisites:Machine Element Design 2Corequisite:-Course Length:51 hours

Outlines:

1- Introduction to Stamping Dies

Types of dies, different stages of die design and manufacturing, mechanical properties of sheet metals, nesting and blank lay out.

2-Shearing Dies

2-1- Theory of Shear

2-2- Detail Design in Shear Dies

- 2-2-1- Die Block Design
- 2-2-2- Punch Design
- 2-2-3- Punch Plate Design
- 2-2-4- Pilot Design
- 2-2-5- Gages Design
- 2-2-6- Design of Finger and Automatic Stops
- 2-2-7- Design of Strippers
- 2-2-8- How to Design and select Fasteners
- 2-2-9- How to Design and select Die Sets

3- Theory and Tooling in Bending Operation

4- Theory and Tooling in Deep Drawing Operation

- **5- Presses**
 - 5-1-Classifications of presses according to the structures and power sources,

Tonnage and Energy, Precision and Stiffness, Shut Height, Single and Double Action Presses.

6- An Overview of Die Design and Manufacturing in Auto Industry.



References:

- 1-Die Design Fundamentals Second Edition By: J.K. Paquin & R.E. Growley
- 2-Die Design Handbook Third Edition SME 1990
- 3-Metals Handbook 9th Edition Vol.14 1997