



# PLASTIC WORKING OF METALLIC MATERIALS

**PROF. P.S. ROBI**

Department of Mechanical Engineering  
IIT Guwahati

**TYPE OF COURSE** : New | Core\_Elective | UG/PG  
**COURSE DURATION** : 12 weeks (29 Jul'19 - 18 Oct'19)  
**EXAM DATE** : 16 Nov 2019

**INTENDED AUDIENCE** : Mechanical Engineering /Manufacturing Engineering/ Metallurgical Engineering students

**COURSE OUTLINE :**

Plastic working of metallic materials is an important subject area for applications like automobiles, aircraft, defense, construction, domestic use, etc. This course is developed for a variety of audience viz., undergraduate as well as post graduate students of Mechanical Engineering and Metallurgical Engineering, practicing engineers and technocrats. The course begins with the fundamentals of metal working and slowly moves to advanced analysis of metalworking. Most of the conventional metal working processes has been discussed highlighting the equipments used , the industrial processes and detailed analysis of the particular processes. After attending this course, the participant will be fully conversant with the conventional deformation processing techniques practiced by the present day metal industries.

**ABOUT INSTRUCTOR :**

Dr. P. S Robi did his B.Tech degree in Mechanical Engineering from Kerala University in 1986, M.Tech in Foundry –Forge Technology from NFFT Ranchi and subsequently earned his Ph.D degree from the Department of Metallurgical Engineering and Materials Science in 1995. He joined IIT Guwahati as an Assistant Professor in the department of Mechanical Engineering in 1997 and was promoted to Associate Professor, and later Full Professor. He served IIT Guwahati under various capacities, viz., Head, Department of Mechanical Engineering, Dean (Research and Development) and presently serving as Deputy Director. He is actively involved in teaching undergraduate and post graduate courses related to Materials and Manufacturing. His research interest is Materials development and Manufacturing. He has successfully completed 13 research projects. He has supervised 6 PhD thesis and around 32 M.Tech thesis and is presently supervising 7 PhD thesis.

**COURSE PLAN :**

- Week 1:** Fundamentals of metal working
- Week 2:** Flow curve determination
- Week 3:** Mechanics of Metal working
- Week 4:** Forging process
- Week 5:** Drawing Operations
- Week 6:** Extrusion of metals
- Week 7:** Rolling of Metals
- Week 8:** Sheet metal forming
- Week 9:** Drawing Operations (contd)
- Week 10:** Extrusion of metals (contd)
- Week 11:** Rolling of Metals (contd)
- Week 12:** Sheet metal forming (contd)