

**10 ME 302 BASIC MANUFACTURING PROCESSES**  
**II B.Tech I Semester**  
*(with effect from the academic year 2011-2012)*

*Lectures/Week : 4 hrs*

*University Exam: 3hrs End Examination Marks: 60*

*Credits: 4*

*Sessional marks: 40*

**UNIT - I**

**Introduction:** Classification of Manufacturing processes – various kinds of production. Casting processes – sand-mould casting – patterns – Moulding materials – cores – Gates and Risers – Different types of casting processes.

**UNIT - II**

**Metal working processes-** Nature of plastic deformation - Hot working and cold working.

**Rolling-** Principle – Rolling stand arrangement – Roll passes – Breakdown passes – Roll pass sequences.

**UNIT – III**

**Forging-** Forging operations – Smith forging – Drop forging – Press forging – Machine forging – Forging design – Drop forging die design – Upset forging die design rules.

**Extrusion and other processes-** Extrusion principle – Hot extrusion processes – Cold extrusion – Extruding tubes – Wire drawing – Rod and tube drawing – Swaging – Tube making.

**UNIT – IV**

**Sheet metal operations-** Press tool operations – Shearing action – Shearing operations – Drawing – Draw die design – Spinning – Bending – Stretch forming – Embossing and coining.

**UNIT –V**

**Introduction to fabrication processes-** Classification – General consideration - Gas Welding and cutting – Electric arc welding – Resistance welding – Other fusion welding processes – Thermit welding - Electro slag welding – Electron beam welding – Laser beam welding.

**TEXT BOOKS:**

1. Manufacturing Technology : Rao P.N.,
2. Production Technology : Sharma P.C.

**REFERENCES:**

1. Workshop Technology : Khurmi R.S.
2. Basic Manufacturing Processes : Amstud

3. Workshop Technology : HazraChoudhary