

## 2. MANUFACTURING PROCESS

### Module I (10hrs)

Introduction to manufacturing processes – different approaches – technical and economic considerations – significance of material properties with respect to selection of manufacturing process.

### Module II (12 hrs)

Conventional casting processes – advantages and limitations – melting practices – design of castings – special casting processes-Conventional material joining processes – concept of weldability – need for dissimilar joints - machining processes – concept of machinability – material examples.

### Module III (8hrs)

Developments in machining processes-Rolling – forging – extrusion – drawing - sheet metal forming – classification, advantages and limitations.

### Module IV (10 hrs)

Introduction to powder metallurgy – recent developments esp. in forging and mechanical alloying - concept of near net shape processing - concept and applications of rapid prototyping – emerging technologies for nano – processing

### Text and Reference Books:

1. Rao, P.N, 'Manufacturing Technology', Tata McGraw Hill, 1996.
2. Kalpakjian, S, 'Manufacturing Engineering and Technology', 3<sup>rd</sup> Edition, Addison-Wesley, 1995.