

# MANUFACTURING PROCESS TECHNOLOGY I & II



**MECHANICAL  
ENGINEERING**



**PROF. SHANTANU BHATTACHARYA**

Department of Mechanical Engineering  
IIT Kanpur

<b>TYPE OF COURSE</b>	: Rerun   Core   UG/PG	<b>COURSE DURATION</b>	: 12 weeks (28 Jan'19 - 19 Apr'19)
<b>PRE - REQUISITES</b>	: None	<b>EXAM DATE</b>	: 28 Apr 2019
<b>INDUSTRY SUPPORT</b>	: SMIL (Gurgaon), HAL (Kanpur and Lucknow), Cyeint (Hyderabad), Small and medium scale production industries.		

**INTENDED AUDIENCE** : Students of BE/ME/MS/BSc/MSc stream

## **COURSE OUTLINE :**

This is an introductory level course in Manufacturing Process Technology and is mostly meant for Undergraduate engineers. At the heart of any manufacturing system is a set of processes which change the size, shape and form of raw materials into the desirable thus giving an industrial nation the power of growing. This course is an introductory course for engineering professionals who would like to take up careers in manufacturing particularly at the process level and also for professionals who are already in manufacturing careers and would like to see the technological changes that the manufacturing processes have witnessed in the last about 5 decades.

## **ABOUT INSTRUCTOR :**

Prof. Shantanu Bhattacharya is currently a Professor at the Department of Mechanical Engineering at the Indian Institute of Technology Kanpur. Prior to joining IIT Kanpur he was associated with Suzuki Motors in the senior management level and has over 6 years of experience in various production capacities and positions. Prof. Bhattacharya currently takes care of the 4-I laboratory at IIT Kanpur as its coordinator and has also been associated with the TA 202 laboratory as coordinator from 2012 to 2015. Both these laboratories are very high end in terms of offering manufacturing training programs.

## **COURSE PLAN :**

**Week 1 to 2** : Manufacturing properties of materials.

**Week 3 to 4** : Casting Processes, Gating Design and Casting Defects.

**Week 5 to 6** : Machining Processes e.g. turning, drilling, grinding etc. Tool life.

**Week 7 to 8** : Advanced Machining Processes e.g. AJM, ECM, EDM, LBM, USM etc.

**Week 9 to 10** : Metal Forming Processes such as rolling, forging, extrusion etc.

**Week 11 to 12** : Micro-fabrication processes, Additive manufacturing.