# MANUFACTURING SYSTEMS TECHNOLOGY I & II

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**INTENDED AUDIENCE :** UG/PG of Mechanical Engineering/ Industrial and Production Engineering/ Material Science and Engineering/ Metallurgical Engineering

**INDUSTRIES APPLICABLE TO :** SMIL (Gurgaon), HAL (Kanpur and Lucknow), Cyeint (Hyderabad), Small and medium scale production industries

**COURSE OUTLINE :**

This is an introductory level course in Manufacturing Systems Technology and management. For most enterprises, the long term goal is to stay in business, grow and make profits. This is particularly true for manufacturing enterprises, which must understand the dynamic changes that are taking place in business environment and are flexible enough to change at every level. This course is an introductory course for engineering professionals who would like to take up careers in manufacturing and also for professionals who are already in manufacturing careers and would like to see the technological changes that manufacturing paradigm has witnessed in the last 3 decades.\

**ABOUT INSTRUCTOR :**

Prof. Shantanu Bhattacharya is currently an Associate 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:** Manufacturing properties of materials, Computer aided designing

**Week 2:** Manufacturing properties of materials, Computer aided designing Cont.,

**Week 3 :** Manufacturing properties of materials, Computer aided designing Cont.,

**Week 4:** Principles and process planning of basic machining processes, Machine tools design.

**Week 5 :** Principles and process planning of basic machining processes, Machine tools design, Cont.,

**Week 6 :** Computer aided process planning

**Week 7 :** Introduction to CNC part programming, Product design

**Week 8 :** Just-in-time manufacturing

**Week 9 :** Quality systems engineering

**Week 10 :** Cost of quality and statistical quality control

**Week 11:** Cost of quality and statistical quality control Cont.,

**Week 12 :** Robotic systems planning and designing