



# PRODUCTION TECHNOLOGY: THEORY AND PRACTICE

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**INTENDED AUDIENCE :** UG and PG students; practicing engineers

**INDUSTRIES APPLICABLE TO :** Machine Tool industries; Automobile manufacturing industries.

### **COURSE OUTLINE :**

This is a fundamental course on Production Technology clarifying some of the basic manufacturing processes including 10 hours of the hands-on laboratory sessions. This course has five modules, namely Materials and their properties, Conventional Machining Processes, Non-Traditional Machining Processes, computer Numerical Controls and Metrology. This is will be helpful for a wide variety of audience including UG students of all Engineering Disciplines and practicing engineers in the manufacturing industries.

### **ABOUT INSTRUCTOR :**

I have completed my Ph.D. in Mechanical Engineering from Moscow, Russia in 1985 followed by post-doctoral at the same university till 1986. From 1986 I am involved in teaching and research in the Mechanical Engineering Department of Indian Institute of Technology Kanpur. My areas of specialization are conventional and non-conventional machining, automatic control, hydraulic control, machine tools and manufacturing automation.

### **COURSE PLAN :**

**Week 1:**Introduction to the course on Production Technology

**Week 2:**Metal machining

**Week 3:**Machining (continued)

**Week 4:**Friction in metal cutting

**Week 5:**Cantilever beam, ring structure, octagon, extended octagon

**Week 6:**Milling operations, broaching operation

**Week 7:**Grinding wheel wear (continued)

**Week 8:**Abrasive Jet Machining

**Week 9:**Major components related to CNC machine tools

**Week 10:**Laboratory Hands-on Training: Introduction to the Power transmission (PPTs)

**Week 11:**CNC part programming exercises in PPT – turning, grooving, threading (Continued)

**Week 12:** Various milling cutters, end milling cutter