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