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 :
Prof. Sounak Kumar Choudhuryhave completed my Ph.D. in Mechanical Engineering from Moscow, Russia in 1985 followed by post-doctoral at the same university till 1986. From 1986 he is involved in teaching and research in the Mechanical Engineering Department of Indian Institute of Technology Kanpur. His 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