



## MANIPAL UNIVERSITY JAIPUR

School of Automobile Mechanical and Mechatronics Engineering

Department of Mechanical Engineering

Course Hand-out

Production Technology II | ME 1508 | 4 Credits | 4 0 0 4

Session: July 18 – Dec 18 | Faculty: Dr A K Sharma/ Dr Mithilesh Dikshit/ Mr A Joshi |

Class: B.Tech: Vth Semester

**Course Outcomes:** At the end of the course, students will be able to

[ME1508.1] Analyse Tool geometry and its attributes, Merchant circle diagram. Tool wear and Tool material.

[ME1508.2] Relate concepts of Machining of components of various sizes and shapes with the help of workshop machines in real time machining environment.

[ME1508.3] Recognize the Operations, Types and Use of Machines like Lathe, Milling, and Drilling etc. for employability.

[ME1508.4] Calculate machining time and metal removal rate.

### A. SYLLABUS

Mechanics of Metal Cutting, Methods of Machining, Types of Cutting Tools, Cutting tool materials, cutting fluids, Nomenclature of Single point cutting tool, Types of chips in machining process, Merchant's Theory, Tool wear and Tool life. Lathe: Introduction to Capstan and Turret lathe. Introduction to shaper, Planer & Slotter. Milling: Mechanics of Milling, Types of Milling Machines and Milling Cutters, Types of Milling processes, Concept of Indexing Mechanism/Dividing Head. Hole Making Operations: Mechanics of Drilling, Nomenclature of Twist Drill Bit, Types of Drilling Machines, Estimation of Machining time & Metal removal rate in Drilling operation. Finishing Operations: Mechanics of Grinding Operation, Specifications and Selection of Grinding Wheels. Lapping, Honing and Buffing, Broaching. Economics of metal machining.

### A. TEXT BOOKS

- i. A. Ghosh, and A.K. Malik, *Manufacturing Science*, Affiliated East West Press Pvt. Ltd., 2nd Edition, 2010.
- ii. P.N. Rao, *Manufacturing Technology Volume-2*, McGraw Hill Publication, 4th Edition, 2013.
- iii. S. Kalpajian, and S.R. Schmid, *Manufacturing Engineering and Technology*, Pearson Publication, 4th Edition, 2002.

### REFERENCE BOOKS

- i. P.C. Sharma, *A text book of production technology*, S. Chand Publication, 4th Edition, 2003.
- ii. R.K. Jain, *Production technology: Manufacturing Processes, Technology and MEtomation*, Khanna Publication, 17th Edition, 2011.

