



RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Syllabus

3rd Year - V Semester: B.Tech. : Mechanical Engineering

5ME4-03: MANUFACTURING TECHNOLOGY

Credit: 3
3L+0T+0P

Max. Marks: 150(IA:30, ETE:120)
End Term Exam: 3 Hours

SN	Contents	Hours
1	Introduction: Objective, scope and outcome of the course.	1
2	Classification of metal removal process and machines: Geometry of single point cutting tool and tool angles, tool nomenclature in ASA, ORS. Concept of orthogonal and oblique cutting.	5
	Type of chips, Mechanics of metal cutting; interrelationships between cutting force, shear angle, strain and strain rate. Thermal aspects of machining and measurement of chip tool interface temperature.	5
3	Concept of machinability, machinability index, factors affecting machinability, Different mechanism of tool wear. Types of tool wear (crater, flank etc), Concept of tool life.	5
	Taylor's tool life equation. Introduction to economics of machining. Cutting fluids: Types, properties, selection and application methods.	5
4	Basic machine tools: Constructional configuration, estimation of machining time on lathe, drilling, shaping, milling, grinding, Gear cutting on milling, Gear hobbling.	5
	Special Purpose Machine Tools: Automatic lathes, capstan and turret lathe machines, operational planning and turret tool layout, sequence of operations.	5
5	Introduction to Grinding and different methods of grinding, Abrasives; natural and synthetic, manufacturing and selection of grinding wheels, Wheel specifications. Honing, lapping, super-finishing.	5
6	High Velocity Forming Methods: Definition; Hydraulic forming, Explosive forming, Electro-hydraulic forming, Magnetic pulse forming.	5
	TOTAL	41

Office of Dean Academic Affairs
Rajasthan Technical University, Kota