

GUJARAT TECHNOLOGICAL UNIVERSITY

Production Engineering

B. E. SEMESTER: VI

Subject Name: **Allied Manufacturing Processes**

Subject Code: **162504**

Teaching Scheme				Evaluation Scheme		
Theory	Tutorial	Practical	Total	University Exam (Theory) (E)	Mid Sem Exam (Theory) (M)	Practical (I)
4	0	2	6	70	30	50

Sr. No.	Course Contents	Total Hrs
1.	Semi Automats and Automats: Semi Automatic Capstan and Turret Lathes, their specifications, working and tooling, attachments, operations. Tool Layouts on Semi- Automats, Single Spindle and Multi Spindle Automats, Bar feeding mechanisms, their Principles of Working, Construction Details and tool Setting, Evaluation of Process time and CAM design. Different mechanisms of Automats, Transfer Machines	12
2.	Thread Manufacturing: Introduction, thread standards, thread terms, thread making methods like casting, rolling, chasing, die and tap cut, grinding, milling, screw broaching, their Constructional Details, Working Principles, Tooling and Effect of Different Process Parameters, Screw thread inspection.	12
3.	Gear Manufacturing: Introduction, methods of manufacturing gears like casting, hot-rolling, stamping, powder-metallurgy, extruding, coining, gear machining methods like form tooth process, template-process, cutter generating process etc. gear finishing processes like gear shaving or burnishing, gear grinding, gear lapping, shot blasting, Gear testing.	12
4.	Coating Processes: Principles and Working, Advantages, Limitations and Application of Metal Coating Processes such as Zinc Plating, Chrome Plating, Dull Plating, Cladding, Blackening, Powder Coating, Ceramic and Glass Coating ,phosphate coating etc.	06

5.	Processing of plastics: Introduction, forming & shaping of plastics, extrusion, injection moulding, blow moulding, thermo forming, compression moulding, transfer moulding and casting and their applications.	06
6.	Unconventional Manufacturing Processes: Introduction, necessity of unconventional manufacturing processes, working process parameters, principles, working, specification, merits & demerits and field of application of unconventional manufacturing processes such as AJM, WJM, USM, USW, EDM, WIRE CUT EDM, ECM, ECG, EBM, PAM, PAW, LBM & LBW.	12

Text Books:

1. Textbook of Production Engineering by P. C. Sharma, S Chand
2. Production Technology Vol-II by O. P. Khanna & Lal, Dhanpat Rai
3. Fundamentals of Manufacturing Processes by Lal G K , Narosa
4. Advanced Machining Processes by V.K.Jain, Allied

Reference Books:

1. Manufacturing Technology by Date, Jaico
2. Textbook of Production Technology by P. C. Sharma, S Chand
3. Production Technology by R. K. Jain, Khanna
4. Manufacturing Technology by P. N. Rao, TMH
5. Principles of Manufacturing Materials and Processes by J. S. Campbell, TMH