

GUJARAT TECHNOLOGICAL UNIVERSITY

PLASTIC TECHNOLOGY

B. E. SEMESTER: VII

Subject Name: **Plastic Mould and Die Design - I**

Subject Code: **172302**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam (E)		Mid Sem Exam (Theory) (M)	Practical (Internal)
				Theory	Practical		
3	0	2	5	70	30	30	20

Sr. No	Course Content	Total Hrs.
1.	Introduction Basics , Principles of mould design, selection of materials for moulds and dies, method of fabrication, economical consideration	04
2.	Material Of Molds & Dies Steels, various types, selection criteria, ferrous & non ferrous material, alloys, heat treatment processes. Material selection for various parts of mould like cavity, core, back plates, inserts, and guide pins, guide bushes, ejector elements, etc. Material selection for various parts of Dies like approach section , land ,etc.	06
3.	Fabrication Techniques Lathe, milling, grinding, drilling, shaping, planning, spark erosion, honing, electroforming, EDM, CNC, etc.	06
4.	Injection Mold Design Introduction: Two plates, three plate, runnerless molds, parting lines, split molds, molds for threaded components. Feed system: Designs of various types of runners, gates, balancing of runners, positioning of gates, mold filling patterns, etc. Ejection system: Pin ejection, stripper plates, valve ejection, blade ejection, air ejection, etc. Cooling & heating arrangements: Design of cooling channels, layouts, etc.	10

5.	Design of Extrusion Dies : Parts of the Die, its functions, design formulae for design of approach section, land, etc. Rheological considerations,	08
6.	Design Of Compression Moulds: Design of positive, semi positive and flash moulds in detail along with examples, sheet work, performs, etc.	04
7.	Design of Transfer moulds: Pot type, plunger type, mould design, design of Pot, feed systems, etc.	04

Text Book:

1. Injection Mould Design by RGW PYE

Reference Books:

1. Injection mould design fundamentals by Denton and Glanvill
2. Extrusion Dies Walter Michael
3. Dies for Plastic Extrusion: M. V. Joshi