GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Mechanical (Production Engg.)

Semester: II

Subject Name: **Product Design for Manufacturing (Major Elective-II)**
Subject Code: **1722803**

Sr. No.	Course Content
1	Engineering materials, metals and their properties, uses, processing methods, design data and applications, selection criteria.
2	Manufacturing and processing limitations, comparative studies; plastics and composites, types, classifications, properties, processing techniques and limitation, selection of plastics for specific applications, finishing and surface coating of different materials. processing of polymers and ceramics, surface modification of materials.
3	An overview of three stages of product design, generating and evaluating conceptual alternatives from manufacturing point of view, selection of material and processes, evaluating part configuration for manufacturability, evaluating parametric design for manufacturability.
4	Design for manufacture, influence of materials process and tooling on the design of components manufactured by metal casting, forming and joining, form design of components.
5	Recent developments in casting, machining, forming and finishing.
6	Product design for manual assembly, product design for high- speed automatic assembly and product design for robot assembly.
7	Ergonomics and automated systems, expert systems for ergonomic design, anthropomorphic data and its application in ergonomic design, limitations of anthropomorphic data, use of computerized database
8	Aesthetic Concepts : Concepts of Unity, concept of order with variety, concept of purpose, style and environment, aesthetic expression, style – components of style, house style, Observing style in capital goods.

Reference Books:

1. Dieter, G.E, Engineering Design: A materials and Processing Approach, McGraw Hill, 1991
2. Ashby, M.F., Materials selection in mechanical design, Pergamon press, 1992
3. Oswaid, P.F and Begeman, M., Manufacturing Process, John Willy, 1987
4. Levy, S. and Dubois, L.H, Plastics production design Engineering Handbook, Methuen Inc, 1985
5. Product Design by Kevin otto, Kristin wood.