

GUJARAT TECHNOLOGICAL UNIVERSITY

Mechanical (Machine Design)

M.E. Semester: IV

Subject Name: **Fluid Drives and Control**

Sr. No.	Course Content
1.	Fluid Power: Its nature, advantages and disadvantages, Hydrostatic transmission systems, working principle, construction and Characteristics of positive displacement pumps, linear and rotary actuators. Comparison between mechanical, electrical, hydraulic and pneumatic power transmission
2.	Properties and selection of hydraulic fluids, Hydraulic symbols, Filtration, hydraulic reservoirs
3.	Working principle and construction of flow Control Valves: directional control, pressure control, flow control, electro-hydraulic servo valves, proportional valves: Hydraulic accessories like accumulators, Intensifiers in hydraulic control systems. Application of fluid power transmission in industrial systems. Design considerations of hydraulic power transmission systems. Systems and their dynamic performances. Pneumatic drives, Fluidics, Fluidic elements and their industrial applications.

Reference Books:

1. Mc Clay Donaldson
Control of Fluid Power Analysis and Design
Ellis Horwood Ltd.
2. A. B. Goodwin
Fluid Power Systems
Mc Millan Pub. Co.
3. B. W. Anderson
The Analysis & Design of Pneumatic Systems
John Wiley