GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Mechanical (I.C. Engine & Automobile)

M.E. Semester: IV

Subject Code: 741101

Subject Name: **Hydraulic & Pneumatic Systems in Automotive Vehicles**

Sr. No.	Course Content
1.	Introduction to fluid properties, hydraulic fluids, hydraulic and pneumatic systems.
2.	Different elements of hydraulic system, constructional and working details of each component; Pumps and motors, characteristics, Maintenance of hydraulic system, Selection criteria for cylinders, valves, pipes etc.
3.	Different elements of hydraulic system, constructional and working details of each component; air compressor, air motor, control valves, actuators and mountings, filter, regulator and lubricator.
4.	Hydro-Mechanical servo systems, Electro pneumatics, ladder diagram, Servo and Proportional valves, PLC-construction, Hydraulic tipping mechanism, power steering, fort lift hydraulic gear, hydro-pneumatic suspension, air brake, maintenance and trouble shooting of pneumatic circuits.

Text Books:

1. Anthony Espisito, " Fluid Power with Application", Pearson Education (Singapore) Pte.Ltd, Delhi, India, Fifth Edition, First Indian Reprint, 2003
2. Werner Deppert and Kurt Stoll, "Pneumatic Controls : An introduction to principles", Vogel-Druck Wurzburg, Germany, 1975
3. Pippenger, J.J, "Industrial Hydraulic & Pneumatics", McGraw Hill, 2002.
4. Anderson B W "The analysis and design of pneumatic systems", John Wiley.
5. A. B. Goodwin, " Fluid Power Systems", Mc Millan Pub. Co.

References Books:

1. Majumdar, S.R., "Oil Hydraulic Systems: Principles and Maintenance", Tata McGraw- Hill Publishing Company Ltd., New Delhi, Fourth Reprint, 2003.
2. Peter Rohner, "Fluid Power Logic Circuit Design – Analysis, Design Method and Worked Examples", The Macmillan Press Ltd., UK, 1979.
3. Festo KG, "Pneumatic Tips", Festo, Germany, 1987.
4. Andrew Parr, "Hydraulic and Pneumatics", Jaico publishing house, 1999.
5. Mc Clay Donaldson, "Control of fluid power analysis and design", Ellis Horwood Ltd.