

Course Number and Name													
BMT7L1 - FLUID POWER AUTOMATION LAB & MICROPROCESSOR LAB													
Credits and Contact Hours													
2 & 45													
Course Coordinator's Name													
MS.V.J.Vijaya													
Text Books and References													
Lab Manual													
Course Description													
To enable the student to understand different hydraulic and pneumatic components and their design.													
Prerequisites							Co-requisites						
FMM							Nil						
required, elective, or selected elective (as per Table 5-1)													
Required													
Course Outcomes (COs)													
CO1	Upon completion of this course, the student can able to understand the use of hydraulic and pneumatic systems												
CO2	Learning different mechanisms												
CO3	Able to design logical circuits.												
CO4	Will gain knowledge CMM based instruments.												
CO5	Apply different FMM principles of different applications.												
CO6	Will practically gain knowledge in FMM analysis												
Student Outcomes (SOs) from Criterion 3 covered by this Course													
COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l	
CO1	H							M			L		
CO2	H							M			L		
CO3			H	H	H						L		
CO4					M						L	L	
CO5					M							L	
CO6						M	M	M				L	

List of Topics Covered

LIST OF EXPERIMENTS:

1. Design and testing of the circuits such as i) Pressure, ii) Flow and iii) Direction control valves
2. Design of circuits with logic sequence using electro pneumatic trainer kits
3. Simulation of basic hydraulic, pneumatic and electric circuits using soft ware
4. Circuits with multiple cylinder sequences in electro pneumatic using PLC
5. Servo controller interfacing i) open loop ii) closed loop
6. Stepper motor interfacing with 8051 microcontroller (i) Full step resolution ii) Half step resolution
7. Computer controlled relays, solenoids and DC motors
8. Study of CMM based instrumentation
9. Modeling and analysis of basic electrical, hydraulic and pneumatic systems using LABVIEW software.