

K.D.K. College of Engineering, Nagpur
 Department of Mechanical Engineering
 VIII sem Industrial Fluid Power (EI-II) Teaching Plan
 Session 2021-22

S.No.	Unit	Code	Description
1	I	101	Fluid Power system's components, advantages
2		102	Applications in Machine tools, material handling, press etc.
3		103	Transmission of power at static and dynamic states
4		104	Types of Hydraulic fluid petroleum, synthetic and water based
5		105	Properties of hydraulic fluids
6		106	Selection of fluids, additives, effect of temp. & pressure on fluid
7		107	Seals and gaskets and selection. Filters, strainers
8		108	Sources of contamination. Hydraulic and pneumatic symbols
9	II	201	Pumps – Types of pumps, Vane pump
10		202	Gear pump, gerotor pump
11		203	Screw pump, Radial and axial piston pumps
12		204	Power and efficiency calculations
13		205	Selection of pumps for hydraulic power transmission
14		206	Numerical on pumps
15		207	Accumulators & Intensifiers, types, functions, applications & design
16		208	Numerical on accumulators and intensifiers
17	III	301	Valves- Necessity of pressure, direction and flow control valves
18		302	Construction, working & symbol of pressure relief valve
19		303	Construction, working & symbols of reducing, sequence, unloading
20		304	Check valves, types of dc valves, 3/2, 4/2, 4/3 pilot & solenoid ope.
21		305	Rotary spool valves, open, closed and tandem center valves
22		306	Method of actuations of dc valves
23		307	Flow control valves : Principle of operation, working & construction
24		308	Pressure compensated and non-pressure compensated flow control
25	IV	401	Actuators- Construction, working and symbols of rotary actuators
26		402	Linear actuators Single acting, double acting
27		403	Method of control of acceleration and deceleration
28		404	Numerical on Linear actuators
29		405	Numerical on Linear actuators
30		406	Calculation of piston velocity, thrust under static & dynamic cond.
31		407	Numerical on Rotary actuators
32		408	Accessories – Pipes, hoses, fittings, oil filters, seals & gaskets
33	V	501	Design of Hydraulic circuit : Meter-in and meter-out
34		502	Bleed-off circuit, Sequencing circuit
35		503	Circuit for milling machine and shaper machine
36		504	Synchronization circuit
37		505	Circuit using counter balancing valves

38		506	Hi-low circuit using unloading valves with the use of electricals
39		507	Circuit for excavator
40		508	Trouble shooting and maintenance of hydraulic circuits
41	VI	601	Introduction to Pneumatic systems
42		602	Applications of pneumatic systems, merits and limitations
43		603	Control valves – Pressure regulating valves
44		604	Flow control valves
45		605	Direction control valves
46		606	Actuators – Rotary – Air motors, types, construction, principle
47		607	Linear Cylinders, types, construction & working principle
48		608	Accessories – Pipes, hoses, fittings, FRL unit

Prof.A.V.Vanalkar

Subject Teacher