- SEMETSER:- I
- COURSE NO.:- FE-112
- COURSE TITLE:- FLUID MECHANICS AND HYDRAULICS
- CREDITS:- 2(1+1)

➢ THEORY

NO. OF UNITS	TOPICS	NO. OF LECTURES
1	*Properties of fluids*	*2*
2	*Static pressure of liquids : Hydraulic pressure, absolute and gauge pressure, pressure head of a liquid. Pressure on vertical rectangular surfaces. Compressible and non compressible fluids. Surface tension*	*2*
3	*Pressure measuring devices: Simple, differential, micro, inclined manometer, mechanical gauges,*	*2*
4	*Floating bodies: Archimede's principle, stability of floating bodies. Equilibrium of floating bodies*	*2*
5	*Fluid flow: Classification, steady, uniform and non-uniform, laminar and turbulent, Bernoulli's theorem and its applications*	*2*
6	*Flow through pipes: Loss of head*	*1*
7	*Flow through orifices, discharge losses. Time for emptying a tank. Venturi meter, pitot tube, Rota meter. Water level point gauge, hook gauge. Reynold's number*	*2*
8	*Pumps: Classification, reciprocating, centrifugal pump. Pressure variation, work efficiency. Types of chambers, selection and sizing*	*2*
	TOTAL	**15**

- PRACTICALS

NO. OF UNITS	TOPICS	NO. OF EXPT.
1	*Study of different tools and fittings*	*1*
2	*To plot flow rate versus pressure drop with U-tube manometer*	*2*
3	*Verification of Bernoulli's theorem*	*2*
4	*Determination of discharge co-efficient for venturi, Orifice, V-Notch*	*2*
5	*Verification of emptying time formula for a tank*	*1*
6	*Determination of critical Reynold's number by Reynold' apparatus*	*2*
7	*Study of reciprocating, centrifugal and gear pump*	*2*
8	*Calibration of Rotameter*	*2*
9	*Study of different types of valves*	*1*
	TOTAL	**15**

- *Reference Books:*

- *Fluid Mechanics* — *V.L. Streeter (1983), McGraw Hill, New York*
- *Fluid Mechanics* — *R.S. Khurmi (1994), Sultan Chand Publishers, Delhi.*
- *Hydraulics* — *Jagdish Lal (1987), Metropolitan Publishers, New Delhi.*
- *Fluid Mechanics Hydraulics* — *Mothi & Seth*