1.	Title of the course	Fluid Mechanics and Hydraulic Machines
2.	Course number	ME204M
3.	Structure of credits	2-1-2-4
4.	Offered to	UG
5.	New course/modification to	Modification To ME2202/8
6.	To be offered by	Department of Mechanical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** To understand the importance of flow phenomena and the relationship between mathematics, physics, and modelling of fluid flow; to develop a professional approach in the application of fluid mechanics concepts to engineering analyses	
10.	**Course Content:** Theory: Fluid continuum, properties of fluids, classification of flows, rheological classification; Pressure and fluid statics, pressure measurement devices, buoyancy and stability; Fluid kinematics, Lagrangian and Eulerian description, vorticity and rotationality; Reynolds transport theorem, Bernoulli equation, conservation of mass, continuity equation, stream function, potential function, conservation of momentum; Dimensional analysis; Internal flow, laminar and turbulent flow in pipes, Moody's chart; External flow, lift and drag, flow over flat plates, cylinders and spheres; Hydraulic machines: pumps and turbines. Laboratory: Fluid property measurement, stability of floating bodies, Bernoulli's principle, impact of jet on surfaces, flow measurement methods, Pelton wheel, centrifugal pump	
11.	**Textbook(s):** 1. White F M, *Fluid Mechanics*, 8th Edition, McGraw-Hill, Inc. (2017).	
12.	**Reference(s):** 1. Fox R W, Philip J P and McDonald A T, *Introduction to Fluid Mechanics*, 9th Edition, Wiley (2015). 2. Munson B R, Young D F,Okiishi T H and Huebsch W W, *Fundamentals of Fluid Mechanics*, 8th Edition, Wiley (2016).	