1.	Title of the course	Fluid Mechanics and Hydraulics
2.	Course number	CE207L
3.	Structure of credits	3-1-0-4
4.	Offered to	UG
5.	New course/modification to	Modification To CE2206/8
6.	To be offered by	Department of Civil and Environmental Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	**Course Objective(s):** This course introduces students to fundamental aspects of fluid mechanics, such as the physical properties of fluids, their classification, and their behaviour at rest (statics) and in motion (dynamics). Upon completion of this course, students will be able to solve a variety of practical engineering problems, such as the design of tanks, pipe networks and open channels.	
10.	**Course Content:** Introduction: definition of a fluid and its physical properties; Fluid statics: hydrostatic pressure, forces on submerged surfaces, manometry, buoyancy, uniformly accelerated motion; Fluid dynamics: Reynolds' Transport Theorem and its application to conservation of mass, momentum and energy, Bernoulli equation, classification of flows - laminar and turbulent; Dimensional analysis and similitude; Flow measurement devices: Pitot tube, venturimeter, orificemeter, weirs and notches; Flow through pipes: friction losses, minor losses, analysis of pipe networks; Pumping systems: classification, pump characteristics and operation; Open channel flows: energy and momentum equations, specific energy, critical depth, flow transitions, uniform flow, gradually varied flows, hydraulic jumps.	
11.	**Textbook(s):** 1. Subramanya K, *Flow in Open Channels*, McGraw Hill (2009). 2. White F M, *Fluid Mechanics*, McGraw Hill (2017).	
12.	**Reference(s):** 1. Munson B R, Okiishi T H, Huebsch W W and Rothmayer A P, *Fluid Mechanics*, Wiley (2013). 2. Som S K, Biswas G and Chakraborty S, *Introduction to Fluid Mechanics & Fluid Machines,* McGraw Hill (2017).	