Course Number and Name
BCE3L3 – FLUID MECHANICS, MACHINERY & STRENGTH OF MATERIALS
Credits and Contact Hours
2 & 45
Course Coordinator's Name
Mr.G.Anbazhagan
Text Books and References
Lab Manual
Course Description

OBJECTIVES

To supplement the theoretical knowledge gained in Mechanics of Solids with practical testing for determining the strength of materials under externally applied loads. This would enable the student to have a clear understanding of the design for strength and stiffness

To make students groom their personality and prove themselves as good Samaritans of the society.

Prerequisites	Co-requisites
Nil	FLUID MECHANICS & MACHINERY

required, elective, or selected elective (as per Table 5-1)
Required
Course Outcomes (COs)

CO1	Students will understand flow through pipes
CO2	Students will practically understand different flow measuring equipment .
CO3	Student will understand the strength of components and testing methods.
CO4	Student will understand the characteristics of pumps.
CO5	students study the importance of flow analysis
CO6	students learn deflection and stresses

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	H			L	L	L	L	L	L	H
CO2	H	M	H			L	L	L	L			H
CO3	H	M	H			L	L	L	L			H
CO4	H	M	H			L	L	L	L			H
CO5	H	M	H			L	L	L	L			H
CO6	H	M	H			L	L	L	L			H

List of Topics Covered

LIST OF EXPERIMENTS

FLUID MECHANICS LAB

1. Determination of flow through pipes, losses in pipes.
2. Calibration of orificemeter and venture meter
3. Flow through notches and weir
4. Flow through open orifice
5. Buoyancy experiment-Metacentric height
6. Impact of jet on vanes-inclined and curved vanes
7. Verification of Bernoulli's equation

FLUID MACHINERY LAB

1. Performance characteristics of Jet pump
2. Performance characteristics of Vane pump
3. Performance characteristics of Centrifugal pump
4. Performance characteristics of Reciprocating pump
5. Performance characteristics of Gear pump
6. Characteristics of Impulse turbine
7. Characteristics of Reaction turbine

STRENGTH OF MATERIALS LAB

1. Tension test of a mild steel rod
2. Double shear test on mild steel and Aluminum rods
3. Torsion test on mild steel rod
4. Hardness test on metals- Brinell and Rockwell hardness
5. Deflection test on helical springs
6. Deflection test on beams
7. Compression test – bricks
8. Double shear test in U.T.M