Techno India NJR Institute of Technology

Course File

FLUID MECHANICLAB (3CE4-22)

For Techno India NJR Institute of Technology
पंकज पोरवाल
Dr. Pankaj Kumar Porwal
(Principal)

Jitendra Choubisa

(Assistant Professor)
Department of CE

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

SYLLABUS

II Year - III Semester: B.Tech. (Civil Engineering)

3CE4-22: FLUID MECHANICS LAB

Credit: 01
0L+0T+2P

Max. Marks: 50 (IA:30, ETE:20)

List of Experiments

1. To study the various pressure measuring devices
2. To verify the Bernoulli's theorem.
3. To calibrate the Venturi-meter.
4. To calibrate the Orifice-meter.
5. To determine Metacentric Height.
6. To determine C_c, C_v, C_d of an orifice.
7. To determine C_d of a mouthpiece.
8. To determine C_d of a V-notch.
9. To determine viscosity of a given fluid.
10. To study the velocity distribution in pipes.

Course Overview:

Fluid Mechanics is an inter-disciplinary course covering the basic principles and its applications in Civil Engineering, Mechanical Engineering and Chemical Engineering The students will have new problem-solving approaches like control volume concept and streamline patterns which are nowadays required to solve the real-life complex problems. The visualization of the fluid-flow problems will be demonstrated to enhance student's interest on the subject

Course Outcomes:

CO.NO.	Cognitive Level	Course Outcome
1	**Comprehension**	Students will analyze and perform Bernoulli's theorem in practical sense.
2	**Application**	Students will understand the concepts of Venturimeter and Orificemeter.
3	**Analysis**	Students will evaluate the use of types of notch in fluid flow problems.
4	**Synthesis**	Students will analyze the orificemeter and mouthpiece.
5	**Evaluation**	Students will evaluate the problems related to fluid flow.

Prerequisites:

1. Fundamentals knowledge of Mathematics.
2. Fundamentals knowledge of physical phenomenon.
3. Fundamentals knowledge of material science.

For Techno India NJR Institute of Technology
पंकज पोरवाल
Dr. Pankaj Kumar Porwal
(Principal)

Course Outcome Mapping with Program Outcome:

Fluid Mechanics Lab															
Course Outcome	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**	**PSO3**
CO239.1	3	3	3	2	1	2	1	1	1	1	1	1	1	1	1
CO239.2	3	2	3	1	1	2	1	1	1	1	1	1	1	1	1
CO239.3	3	2	3	2	1	1	1	1	1	1	1	1	1	1	1
CO239.4	3	3	3	2	1	2	1	1	1	1	1	1	1	1	1
CO239.5	3	2	3	1	1	2	1	1	1	1	1	1	1	1	1
CO239 (AVG)	3	2.4	3	1.6	1	1.8	1	1	1	1	1	1	1	1	1

For Techno India NJR Institute of Technology
पंकज पोरवाल
Dr. Pankaj Kumar Porwal
(Principal)

Course Coverage Module Wise:

Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute

Syllabus Deployment

Name of Faculty	: Mr. Bharat Kr. Suthar	Subject Code: 3CE4-22
Subject	: Fluid Mechanics Lab	
Department	: Civil Engineering	Sem: III
Total No. of Lab Planned: 10		

COURSE OUTCOMES HERE (3 OUTCOMES)

At the end of this course students will be able to:

CO1: To verify the theorems in fluid mechanics and calibration of the instruments like Venturimeter, Orificmeter

CO2: Determine different coefficients and factors involved in fluid flow

CO3: Build knowledge on the working principles, components, functions of hydraulic equipment

Lab No.	Exp. No.	Experiment Name
1	1	To study the various pressure measuring devices
2	2	To verify the Bernoulli's theorem
3	3	To calibrate the Venturi-meter
4	4	To calibrate the Orifice-meter
5	5	To determine the meta-centric height
6	6	To determine Cc, Cv, C_d of an orifice
7	7	To determine C_d of a mouthpiece
8	8	To determine C_d of a V-notch
9	9	To determine viscosity of a given fluid
10	10	To study the velocity distribution in pipes

For Techno India NJR Institute of Technology

पंकज पोरवाल

Dr. Pankaj Kumar Porwal

(Principal)

Faculty Lab Manual Link:
https://drive.google.com/file/d/15dFTQBUM-Cu6Z_VHH9WoeeBxmXa2XXdZ/view?usp=share_link

Viva QUIZ Link

1. https://www.sanfoundry.com/1000-fluid-mechanics-questions-answers/
2. https://testbook.com/objective-questions/mcq-on-fluid-mechanics--5eea6a0c39140f30f369e136
3. https://www.indiabix.com/mechanical-engineering/hydraulics-and-fluid-mechanics/
4. https://byjus.com/gate/fluid-mechanics-mcqs/

Assessment Methodology:

1. Practical exam using Surveying Lab software.
2. Internal exams and Viva Conduct.
3. Final Exam (practical paper) at the end of the semester.

For Techno India NJR Institute of Technology
पंकज पोरवाल
Dr. Pankaj Kumar Porwal
(Principal)