

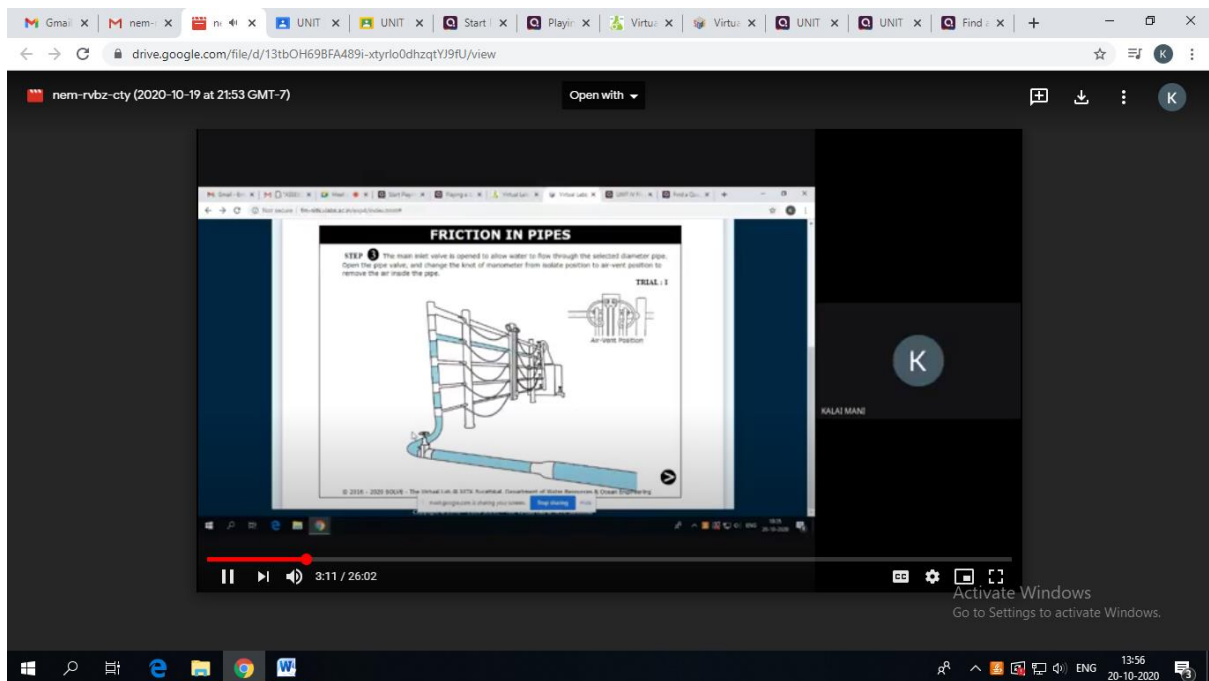
RAMCO Institute of Technology, Rajapalayam

Department of Civil Engineering

RIT- IITM PALS VLAB Initiative

### Virtual Laboratory Session Handling Details

Name of the Faculty : Mrs.R.Kalaimani  
Subject Code and Title : CE8302- Fluid Mechanics  
Year and Branch : II – Civil Engineering  
Topics Covered : Friction in pipes  
Name of the Laboratory : Fluid Mechanics Laboratory  
Website Link : <http://fm-nitk.vlabs.ac.in/exp4/index.html#>  
No.of Students participated : 17/14  
Assignment given if any : No  
(If Yes share the uploaded folder link)



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**FRICION IN PIPES**

**STEP 1** The exit valve of the collecting tank is closed and time taken for the tank water to rise by 150cm is noted.

**TRIAL : 1**

Initial reading = 15cm  
Final reading = 150cm  
Rise (h) = 135cm  
Time required by water to rise 135cm height = 30sec

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**FRICION IN PIPES**

**Observation**

Length of the pipe (L) = 3m  
Diameter of pipe (D) = 40mm  
Area of collecting tank (A) = 3500cm<sup>2</sup>  
Head Loss (h<sub>L</sub>) = 107.50cm  
Time taken (t) = 30.00sec  
Rise (h) = 135cm  
Acceleration due to gravity (g) = 981 cm/sec<sup>2</sup>

**Calculations**

$Q_{th} = \frac{1.186 \times 10^{-6} \times \text{Time}}{L}$

Velocity (v) =  $\frac{h}{t} \times \frac{A}{L}$

Analytical Friction Factor (f) =

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