



Course Description	
Course title	Fluid Mechanics
Course code	PHYS 216
College	Engineering
Department / Program	Engineering/Renewable Energy Engineering
Year/ Level	3/6
Course Type	<p>A.</p> <p><input type="checkbox"/> University</p> <p><input type="checkbox"/> College</p> <p><input type="checkbox"/> Department</p> <p><input checked="" type="checkbox"/> Program</p> <p><input type="checkbox"/> Others</p> <p>b.</p> <p><input checked="" type="checkbox"/> Required</p> <p><input type="checkbox"/> Elective</p>
Credited Hours	(3 Cr. Hrs)
Contact Hours	(LT:2, LB:2 ,TR:0)
Pre-requisites (if any)	Phys102, Phys 243
Co-requisites (if any)	---
Course description	Introduction to fluid mechanics; unit conversion and dimensions, Physical properties of fluids and fundamental concepts in fluid mechanics, basics of hydrostatics, hydrostatic pressure forces on plain and curved surfaces, buoyancy, and stability. Fluid kinematics and conservation of mass. Introduction to Fluid dynamics, venturi effect and stagnation point. Continuity, Energy and Momentum Equations; Flow



	<p>Measurements, and dimensional analysis as applied to engineering problems in fluid mechanics, laminar and turbulent flow, engineering applications such as Analysis of Pipe Flow Systems, Duct and Open Channels; Flow Over Immersed Bodies, Viscous Flow; fluid forces on moving bodies, and Fluid Machinery.</p> <p><u>Fluid mechanics lab</u></p> <p>Stability of floating body, impact of a jet, Pelton's turbine, centrifugal pumps, series and parallel pumps, centrifugal fan, flow in pipes and pipe fittings and open channel flow.</p>
Course Main Objectives	<p>This course is designed to develop a basic understanding of some fundamentals of fluid mechanics and apply this knowledge to the analysis of common engineering systems.</p>
Learning Outcomes	<p>Knowledge and Understanding Define the concepts and laws of fluid mechanics. Record fluid mechanics experimental results and represent data graphically.</p> <p>Skills: Apply fluid mechanics concepts and laws to solve problems.</p> <p>Values: Work individually or in teams in laboratories and on research projects professionally.</p>
References	<p>Textbook: - Engineering Fluid Mechanics: Donald F. Elger, Barbara C. William, Clayton T. Crowe & John A. Roberson, 10th Edition, Pearson, 2014</p> <p>Other References: - Introductory Fluid Mechanics by Joseph Katz; Cambridge University Press, 2010 - Munson, B.R., Huebsch W.W., Rothmayer A.P. and Okiishi, T.H. 2013, <i>Fundamentals of Fluid Mechanics</i>, 7th edition, John Wiley & Sons, Inc, Hoboken, NJ</p>