




AL IMAM MOHAMMAD IBN SAUD ISLAMIC UNIVERSITY
COLLEGE OF ENGINEERING
Department of Mechanical Engineering

Course Information	
Course Code and Name:	ME 322 Thermo-fluids Laboratory
Credit Hours:	1 (2 contact hours in lab)
Prerequisites:	ME 222 Fluid Mechanics

Course Description
Introduction to basic fluid mechanics instrumentation, experimental verification and reinforcement of the analytical concepts introduced in ME221 Thermodynamics and ME222 Fluid Mechanics. Includes the study of pressure drop in pipes, fittings and centrifugal pump performance. Typically offered in Fall and Spring semesters

Textbook			
Title	Engineering Fluid Mechanics		
Authors	Clayton T. Crowe, Donald F. Elger, et. al.		
Publisher	Wiley	Year and Edition	9 th edition SI version, 2008

Course Contents
Demonstration of the behavior of ideal gases under isobaric and isothermal processes
Pressure measurement and calibration of a Bourdon gage
Location and Equivalent hydrostatic force on a plane submerged surface
Verification of Bernoulli's Principle
Study the effect of diameter and type of entry on the velocity of flow through an orifice
Comparison and accuracy of different types of flow meters (nozzle plate, Venturi-meter, Rotameter)
Study of pipe friction in laminar and turbulent flow regimes
Plotting characteristic curves of a variable speed centrifugal pump
Drag force & viscosity measurement using a falling ball viscometer
Demonstration of hydraulic ram using a Hydraulic Ram pump

Academic Coordinator Dr. Syed Muhammad Fakhir Hasani	Signature 
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