Syllabus for ENGR120: Fluid Mechanics

Fall 2009
Instructor: Tom Harmon

Designation:	Fluid Mechanics
Catalog Description:	Introduction to fluid properties, fluid statics, conservation of mass, energy and momentum, and internal and external flow. Topics include hydrostatic pressure, hydraulic head, friction losses, laminar and turbulent flow, pipe flow, open-channel flow, flow through porous media, and dimensional analysis.
Text Books and Other Required Materials:	
Course Objectives:	Students completing this course will understand basic fluid mechanics, including fluid properties, fluid statics, the origin of conservation of mass, energy and momentum equations and their application to a range of internal and external flow problems, and laminar and turbulent flow conditions. They will also acquire an introductory knowledge of non-Newtownia fluids, dimensional analysis, open-channel flow, and flow through porous media. Finally, students will gain experience in with designing fluidic systems and specifying these systems in technical reports.
Prerequisites by Topic:	ENGR 57 Dynamics MATH 24 Linear Algebra and Differential Equations
Topics:	Fluid properties; fluid statics; conservation of mass, energy, and momentum equations; pipe and other internal flow; Bernoulli equation; hydrostatic pressure; dimensionless numbers; laminar and turbulent flow; velocity head; friction losses (e.g., pipe, valves, fittings); pipe networks; flow measurement; pumps, turbines, and compressors; non-Newtonian flow; flow through porous media
Class/laboratory Schedule:	
Professional Component:	
Grading Scheme:	Letter grade only
Coordinator:	Thomas Harmon