

Widener University
Civil Engineering Department
ENGR-320: Fluid Mechanics
2005 Summer Semester
Prof. Mesut Pervizpour

Office:	Kirkbride 349B
Phone:	610-499-4046
Email:	mpervizpour@mail.widener.edu
Office Hours:	Check Office Door!

Textbook: Engineering Fluid Mechanics, 7th edition,
Crowe, Roberson, & Elger, Wiley 2001

Tentative Grading: (± will be used)	Mid-term test average	50%
	Homework/Quizzes/Design	20%
	Final Exam	30%
	Total:	100%

Class Schedule: Lecture, M, W 11:05 – 12:30 pm (BRUC 012)

COURSE DESCRIPTION

A study of incompressible fluids at rest and in motion. Hydrostatics, buoyancy, and stability. Eulerian and Lagrangian descriptions; the velocity field. Control-volume analysis and the conservation of mass, energy, and momentum. Inviscid flows; the Euler and Bernoulli equations. Viscous flows; the boundary layer, lift, and drag. Dimensional analysis and similarity. Laminar and turbulent flow in pipes, fittings and open channels. Application and computer techniques to the solution of problems. Prerequisite: ENGR 214, Math 241. Corequisite: Math 242. .

GENERAL CONDUCT OF COURSE

1. During the semester, 2 one-hour tests will be given. The student **MUST** take all two tests. Basically **NO** make-ups are granted unless absence from a test is justified with proper documentation. An unexpected absence will result in a zero grade. All tests will be based on the material covered up to the date of test. Unless otherwise instructed, closed-book tests should be expected. Any grade review you see justified should be brought to my attention within the first week of receiving the grade.
2. Homework will be assigned and specified either as “*suggested*” or “*to be collected*” at that time. The homework assignments should be ***neat, orderly, and submitted on Engineering Computation Paper***. Include an appropriate, well-drawn sketch whenever possible. ***Homework is due at the beginning of the lecture.*** There will be in class unannounced quizzes.
3. If you have a disability for which you are or may be requesting academic accommodations, please contact your professor and provide appropriate approval from the university as early as possible in the semester.
4. It has been my experience in the past that when students study in groups, and communicate and share resources, they seem to perform better. Obviously, this is a generalization and I am sure there are many exceptions. However, please keep this in mind and take advantage of study groups whenever you can.

COURSE OUTLINE

Date	Topic	Chapter
05/23	Introduction/ Properties	1, 2
05/25	Hydrostatics-1	3
06/01	Hydrostatics-2	3
06/06	Kinematics	4-1 to 4-3
06/08	Control Volume	4-4
06/13	Mass Conservation (continuity)	4-5
06/15	Pressure in Flowing Fluids	5
06/20	Momentum-1	6
06/22	Momentum-2	6

FIRST EXAM (Chapters 1 – 4)	Monday, June 27, 2005
------------------------------------	------------------------------

06/29	Energy-1	7
07/06	Energy-2	7
07/11	Energy-3	7
07/13	Similitude	8
07/18	Dimensional Analysis	8
07/20	Resistance: Laminar Flow	9
07/25	Boundary Layers-1	9
07/27	Boundary Layers-2	9

SECOND EXAM (Chapters 1 – 8)	Monday, August 01, 2005
-------------------------------------	--------------------------------

08/03	Drag and Lift-1	11
08/08	Drag and Lift-2	11
08/10	Pipe Flow-1	10-1 to 10-5
	Pipe Flow-2	10-1 to 10-5

FINAL EXAM (TBA)
