MAE 331 – Fluid Mechanics
Mechanical and Aerospace Engineering Department - West Virginia University
Fall 2016, TR, 2:00 pm – 3:15 pm, G-39 ESB

Text

Fundamentals of Fluid Mechanics (Custom Book), by Munson, et al., 7th edition, John Wiley & Sons, Inc., ISBN 9781118608722

Course Description

Basic governing equations for fluid flow are derived and used to solve engineering problems. Fluid statics, Bernoulli equation, mass, momentum, and energy conservation, dimensional analysis, internal and external flow, and laminar and turbulent flow are covered.

PRE-REQUISITE: Must have passed MATH 251 with a grade of C or better and MAE 241, Statics.

Course Instructor: Dr. Christopher Griffin, MAE Department

Office Hours: MW 4:00 pm – 5:00 pm, T 3:30 pm – 4:30 pm or by appointment (open door policy)
Contact Information: Office – 939 ESB, Phone – 304.293.3386, E-mail – cgriffin@mail.wvu.edu

Grading

The final grade in the course will be assigned on the following basis:

Homework/Quizzes	10%
Project	10%
Exam 1	25%
Exam 2	25%
Final Exam	30%

The letter grade will be based on a straight 90-80-70-60… scale.

NOTE: A final course score of 59.4% and below is a letter grade of "F", whether you are graduating or not, have a job lined up or not. No exceptions.

Assignment / Attendance Policy

Make-up exams and late homework will **NOT** be allowed without **prior** approval, consistent with WVU policies. Homework problems will be assigned approximately once per week. These problems will be graded and we will have unannounced, in-class short quizzes covering the material. Neat work is expected on all material submitted for grading (i.e. have to be able to read it to grade it). **Multiple sheets must be stapled and in the order assigned**. You may use engineering problem paper or standard notebook paper, but NOT scratch paper or paper torn from a spiral notebook. Attendance is expected! Students cannot reasonably expect to master the course material without regular attendance in class. The unannounced quizzes will serve as the attendance check throughout the semester. You will **NOT** have the opportunity to make-up a quiz unless a previous arrangement has been made. You are all adults, and I want to treat you as such. Therefore, it is up to you to decide how important learning the material presented in class is. Make no mistake, if you do not come to class you will not succeed. Students are responsible for all material covered in class regardless of their attendance.

Teaching Philosophy

- As the instructor, I will do everything possible to help you learn and understand the material, but you must do your part. The student is ultimately responsible for actually learning the material.
- In my course, a grade of "C" means that you have gained an average knowledge of the topic material and have a grasp of only the basic concepts. It is not a trivial matter to obtain an "A" in my course, but by the same token, it is also difficult to get an "F".
- If you have a question on material, the textbook, homework, how I grade, and life in general, come and see me. I am always open to answering your questions or meeting to discuss your questions and concerns.

COURSE LEARNING OBJECTIVES MAPPING

Course Learning Objective	ABET Outcomes*
Develop a logical approach to solving engineering problems in fluid statics and fluid dynamics.	**A**
Be able to detect the types of problems that can be solved in a simple analytic process.	**A**
Apply knowledge from mathematics, physics, and statics to solve fluid flow problems.	**A**
Learn to apply assumptions and simplifications in the solution to various fluid problems.	**A**
Understand that the study of fluids and their motion is an enormous field and there are still fluid flow phenomena that are not well understood; fluid mechanics continues to be an active area of research and innovation.	**J**
Gain an appreciation that we are surrounded by fluid mechanics in every-day life.	

**This course effectively supports more ABET outcomes than those shown in this table, but will provide evidence to support the assessment of ABET outcomes A and J.*

OUTCOME A. *An ability to apply knowledge of mathematics, science, and engineering;*

OUTCOME J. *Graduates will have knowledge of contemporary issues;*

Adverse Weather Commitment

In the event of inclement or threatening weather, everyone should use his or her best judgment regarding travel to and from campus. Safety should be the main concern. If you cannot get to class because of adverse weather conditions, you should contact me as soon as possible. Similarly, if I am unable to reach our class location, I will notify you of any cancellation or change by 11:00 am (3 hours before class starts), using MIX E-mail Addresses and eCampus to prevent you from embarking on any unnecessary travel. If you cannot get to class because of weather conditions, I will make allowances relative to required attendance policies, as well as any scheduled tests, quizzes, or other assessments.

Social Justice Statement

"The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Accessibility Services (293-6700). For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see http://diversity.wvu.edu."

Academic Dishonesty

The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code http://studentlife.wvu.edu/office_of_student_conduct/student_conduct_code. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me before the assignment is due to discuss the matter.