Instructor: Dr. Mark Wasikowski  
Course Time and Place: MW 2.30 – 4:20; B140 DP  
Office and Hours: MW 8-9.30 am, or by appointment. F101L  
Teaching Assistant: Hassan Qandil  


Required Text: “Fluid Mechanics”, Hibbeler, 2nd, Pearson  

Pre-requisites:  
MATH 2730, MATH 3410, MEEN 2210, and MEEN 2332 all with a C or better.  

ABET Criteria: MEEN 3130 addresses several ABET program outcomes, including applying knowledge of mathematics, engineering and science as well as identifying, formulating and solving engineering problems. Upon successful course completion:  
1) Demonstrate knowledge via assignments, quizzes, and exams that require of applying math (vector calculus and differential equations) and fundamental science (conservation of mass, momentum) to fluid mechanics problems  
2) Identify engineering problems and use basic laws of fluid mechanics to solve these problems  
3) Draw a free-body diagram of a fluid statics problem, convert a pressure distribution into a resultant force, and solve for unknown forces  
4) Use Moody diagram to find friction factor and solve for pressure drop due to friction  
5) Understand and apply Bernoulli’s equation  
6) Find the total acceleration of a fluid particle  
7) Be familiar with the derivation of the Navier-Stoker equations  
8) Determine dimensionless groups from a list of variables using the Buckingham Pi theorem  

Calculators: Only calculators that are approved for this course are those permitted on the Fundamentals of Engineering (FE) exam toward Professional Engineer (PE) licensing:  
1) Hewlett Packard—HP 33s and HP 35s models, but no others.  
2) Casio: All fx-115/991. Any Casio must contain fx-115 or fx-991 in name  
3) Texas Instruments: All TI-30X/36X models. Any TI must contain either TI-30X/36X
**GRADES:** Standard grading scale used: 90/80/70/60. Re-grade request must be made in class day is returned. No re-grade requests after class dismissed. Entire exam will be re-graded, which may result in lower score than originally assigned. Make-up NOT allowed. Only exception being University excused absences with documentation provided.

<table>
<thead>
<tr>
<th>Participation</th>
<th>20%</th>
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<tr>
<td>Homework</td>
<td>10%</td>
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<tr>
<td>Quizzes</td>
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<tr>
<td>Mid Term</td>
<td>20%</td>
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<td>Final Exam</td>
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**Participation:** lecture participation key - mix of slides, problem solving, and group discussion. Slides available on Canvas. Download / print slides before class. Review slides / read assigned textbook sections ahead of time. Participate through attendance, problem solving, and answering questions. UNT iClicker tracks participation. Each student must have iClicker account properly linked to course.

**Homework:** Due dates beginning of next class

**Quizzes:** In class closed book problems like recently presented homework. Typically, one problem approximately 30 minutes at end of class most Wednesday’s

**Mid Term and Final Exam:** In class closed book multiple choice, both qualitative and quantitative engineering applications

**TENTATIVE LECTURE SCHEDULE**

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<th>Quiz</th>
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<td>6/4-6</td>
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<td>Fundamental Concepts, Fluid Statics</td>
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<td>6/11-13</td>
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<td>Fluid Flow, Mass Conservation</td>
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<td>Work &amp; Energy</td>
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<td>4</td>
<td>6/25-27</td>
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<td>Fluid Momentum, Dimensional Analysis</td>
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<td>5</td>
<td>7/2-4</td>
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<td><strong>Mid Term and Holiday</strong></td>
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<td>7/9-11</td>
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<td>Differential Fluid Flow</td>
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<td>7/16-18</td>
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<td>Internal Viscous Flow</td>
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<td>Internal Viscous Flow</td>
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<td>External Flow</td>
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<tr>
<td>10</td>
<td>8/6-8</td>
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<td>Turbomachines</td>
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**Mid Term:** 2 July  
**Final Exam:** 10 August
ATTENDANCE POLICY

Responsibility for class attendance rests with student. Class attendance is expected. You are responsible for helping me teach you, which is difficult to do if you are absent. The course continues whether you are present or not. You must catch up your own if you are absent. Material and discussions (in similar but not identical forms) presented in class is likely to appear on exams. Attendance tracked via iClicker and supplemented with attendance sheets circulated at beginning of every class. It is a student responsibility to ensure signing attendance roster during class. No roster changes will be made after each class. Per University policy 06.039, an absence may be excused for following reasons: religious holy day, including travel for that purpose; active military service, including travel for that purpose; participation in an official university function; illness or other extenuating circumstances; pregnancy and parenting under Title IX; and when University is officially closed. Student is responsible for requesting an excused absence in writing as early in semester as possible, and personally delivering to me satisfactory evidence to substantiate excused absence.

ACCESS TO INFORMATION – EAGLE CONNECT

Students’ access point for business and academic services at UNT is located at: my.unt.edu. All official communication will be delivered to your Eagle Connect account. For more information, please visit website that explains Eagle Connect and how to forward e-mail: eagleconnect.unt.edu/. Canvas is used to post syllabus, homework, lecture slides, grades, etc. Instructor can only communicate through BB to your UNT eagle account.

EMERGENCY NOTIFICATION & PROCEDURES

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In event of university closure, refer to Blackboard for contingency plans for covering course materials.

ACADEMIC INTEGRITY STANDARDS AND SANCTIONS FOR VIOLATIONS

UNT core values of trust, honesty, and integrity are necessary for learning to occur. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from University. Academic dishonesty will not be tolerated and will result in score of zero on the assignment. Student will be reported to Office of Academic Integrity for appropriate disposition. No exceptions.
ACCEPTABLE STUDENT BEHAVIOR

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated. Students engaging in unacceptable behavior will be directed to leave classroom and be referred to Dean of Students office to consider whether student's conduct violates Code of Student Conduct. Code of Student Conduct is at deanofstudents.unt.edu/conduct.

ADA STATEMENT

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with Office of Disability Accommodation (ODA) to verify eligibility. If disability verified, ODA will provide accommodation letter to be delivered to faculty to begin private discussion regarding specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible to avoid delay in implementation. Students must obtain new letter of accommodation every semester and meet with faculty prior to implementation. For additional information see ODA website at disability.unt.edu.

RETENTION OF STUDENT RECORDS

Student records pertaining to course are maintained in a secure location by instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during duration of course are kept for one semester after course completion. Course work completed online, including grading information and comments, is also stored in a safe electronic environment for one year. Students have right to view individual record; however, information about students' records will not be divulged to other individuals without proper written consent. Students should review Public Information Policy and Family Educational Rights and Privacy Act (FERPA) laws and University’s policy.

STUDENT PERCEPTIONS OF TEACHING EFFECTIVENESS (SPOT)

Student feedback is important and essential part of participation. Student evaluation of instruction is requirement for all UNT organized classes. Survey available during weeks 13 and 14 of long semesters to provide students opportunity to evaluate how course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with survey link in UNT email. Click link and complete survey. Once students complete survey they will receive confirmation email that survey has been submitted. For information, visit spot website at www.spot.unt.edu or email spot@unt.edu. We complete SPOT evaluations / ABET forms in class in this course.

SYLLABUS CHANGES

Instructor reserves right change syllabus. Any changes will be announced in class and posted on-line with an accompanying email to student's UNT email address.