Prerequisite(s):
MATH 2730, MATH 3410, MEEN 2210, and MEEN 2332 all with a C or better.

Catalog Course Description:

Required Text:

ABET OUTCOMES: MEEN 3120 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-Stokes equations.
8) Determine dimensionless groups from a list of variables using the Buckingham Pi theorem.

CALCULATORS: only calculator approved for course are those permitted on (FE) exam. No graphing calculators.

1) Hewlett Packard—HP 33s and HP 35s models, but no others.
2) Casio—All fx-115 and fx-991 models. Any Casio calculator must contain fx-115 or fx-991 in its model name.
3) Texas Instruments: All TI-30X and TI-36X models. Any TI calculator must contain either TI-30X or TI-36X in its model name.
GRADES: Standard grading scale used: 90/80/70/60. Re-grade request must be made in class the day 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.

Attendance 5% (Extra credit for interactive lecture participation)
Homework 20% (Online PDF submissions)
Quizzes 20% Online problem solving, like home practice
Mid Term 25% Reading comprehension / multiple choice / qualitative
Final Exam 30% Online reading comprehension / multiple choice / qualitative

10% Extra Credit is available through Quizzes and Exams

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Final (Friday, Aug 7th 2pm to 4pm) (Ch: 7-11) (Online using Lockdown Browser & Respondus Monitor)

ACCEPTABLE BEHAVIOR: I consider this class to be place where you will be treated with respect. All expected to contribute to respectful and inclusive environment. Students engaging in unacceptable behavior that may violate the Code of Student Conduct will be directed to leave the ZOOM session and the instructor may refer the student to the Dean of Students for investigation. We enforce student Code of Student Conduct at deanofstudents.unt.edu/conduct.

REMOTE COURSE DELIVERY

- All course announcements, lecture notes, recorded lectures and assignments will be posted on the MEEN 3120 Canvas site. **Students are expected to have access to the textbook on their own.** I will try to provide recommendations for alternative educational resources that are available online, whenever possible.
- We will have synchronous **(live) Zoom meetings during the regular class meeting times.** All Zoom meeting invitations along with references to Zoom
resources will be posted on the MEEN 3120 Canvas site. We will use Zoom chat in lieu of in-class discussions.

- It will be the student responsibility to log in to Zoom and join the virtual lecture using the details provided on ZOOM tab in CANVAS.
- I will hold virtual office hours via live Zoom sessions, a student can schedule a meeting by emailing me (hassan.qandil@unt.edu).
- All assignments will be posted online via CANVAS. Submissions are also online through CANVAS and in a PDF format.
- All quizzes and exams will be conducted via CANVAS using a LockDown browser and Respondus Monitor, which required that the student have access to a webcam and a microphone. For more details, please refer to the following link: https://clear.unt.edu/supported-technologies/respondus-lockdown-browser (Links to an external site.)
- Your attendance/class participation will be evaluated based on your participation in Zoom sessions.

ACADEMIC INTEGRITY STANDARDS AND SANCTIONS FOR VIOLATIONS:
According to UNT Policy 06.003, 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 the University. Academic dishonesty will not be tolerated and will result in zero assignment score and reported to Office of Academic Integrity. No exceptions. Having any calculator not on the approved list is a violation of Academic Integrity.

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

STUDENT PERCEPTIONS OF TEACHING EFFECTIVENESS (SPOT)
Course participates in SPOT evaluations (http://spot.unt.edu/ or email spot@unt.edu).

RETENTION OF STUDENT RECORDS Course
Follows Family Educational Rights and Privacy Act (FERPA) laws and UNT Policy 10.10, Records Management and Retention.

SYLLABUS CHANGES
Instructor reserves right change syllabus. Any changes announced in class and posted to CANVAS with an accompanying email to student’s UNT email address.