If COVID-19 Changes Operations

If Texas Tech University campus operations are required to change because of health concerns related to the COVID-19 pandemic, it is possible that this course will move to a fully online delivery format. Students will need to have access to a PC-type e laptop that meets the laptop requirements https://www.depts.ttu.edu/coe/dean/engineeringitservices/buyingtherightcomputer.php as stated by the Whitacre College of Engineering.

Illness-Based Absence Policy

If at any time during this semester you feel ill, in the interest of your own health and safety as well as the health and safety of your instructors and classmates, follow the steps below and do *not* attend face-to-face class meetings or events. The steps outlined below should be followed to ensure your absence for illness will be excused. These steps also apply to not participating in synchronous online class meetings if you feel too ill to do so and missing specified assignment due dates in asynchronous online classes because of illness.

1. If you are ill and think the symptoms might be COVID-19-related:
    a. Call Student Health Services at 806.743.2848 or your health care provider. After hours and on weekends contact TTUHSC Nurse-on-Demand (After Hours/Weekends) at 806.743.2911.
    b. Self-report immediately using the Dean of Students COVID-19 webpage (https://www.depts.ttu.edu/dos/COVID-19Absence.php). This website has specific directions about how to upload documentation from a medical provider and what will happen if your illness renders you unable to participate in classes for more than one week.
    c. If your illness is determined to be COVID-19-related, all remaining documentation and communication will be handled through the Office of the Dean of Students, including notification of your instructors of the period of time you may be absent from and may return to classes.
    d. If your illness is determined not to be COVID-19-related, please follow steps 2.a-2.d below.

2. If you are ill and can attribute your symptoms to something other than COVID-19:
    a. If your illness renders you unable to attend face-to-face classes, participate in synchronous online classes, or miss specified assignment due dates in asynchronous online classes, you are encouraged to visit with either Student Health Services at 806.743.2848 or your health care provider. Note: that Student Health Services and your own and other health care providers may arrange virtual visits.
    b. During the health provider visit, request a "return to school" note;
    c. E-mail the instructor a picture of that note;
    d. *Return to class by the next class period after the date indicated on your note.*

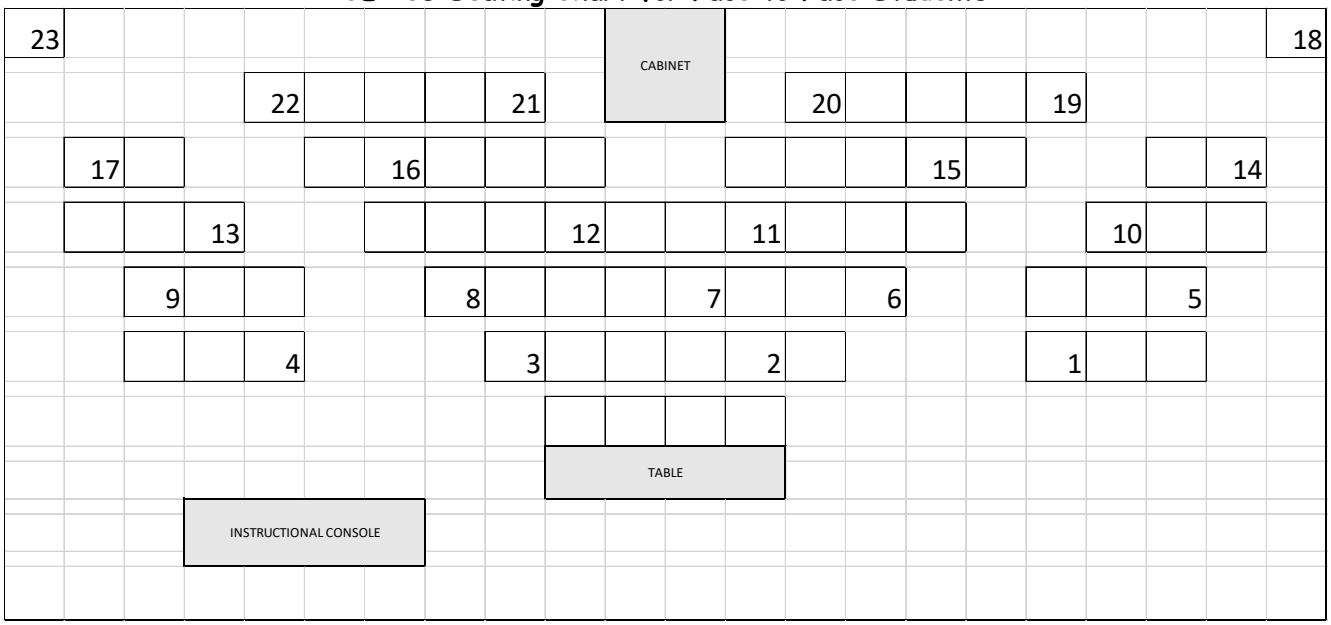
Following the steps outlined above helps to keep your instructors informed about your absences and ensures your absence or missing an assignment due date because of illness will be marked excused. **You will still be responsible to complete within a week of returning to class any assignments, quizzes, or exams you miss because of illness.**

Covid-19 Policies and Procedures in Engineering Buildings

1. All people entering an Engineering Building must ***wear a mask and maintain social distances (6 ft)*** at all times
2. ***Do not enter any Engineering Building*** until 3 minutes before your class is scheduled to begin, and you must ***enter through a designated door*** (exception for ADA compliance) and maintain social distancing (see signs on exterior doors to identify entrance and exit doors)
3. ***Leave through a designated door***. Signage will indicate traffic directions; you are required to follow that signage (except in the case of a fire or emergency, leave from the closest door)
4. ***All classrooms have assigned seating*** and students are to sit in the same seat every class, as well as wipe off their seat, desk, and equipment (wipes provided) when they enter each classroom, and prior to leaving each classroom
5. ***No eating or drinking*** in any common areas or the classrooms, and no loitering in buildings
6. ***Stay 9 ft from the instructor***(s)
7. Students will be ***dismissed row by row starting immediately at the class scheduled ending time.*** That gives 10 mins to clear the room.
8. ***In case of inclement weather*** (e.g., rain or snow) students can form orderly lines, in the buildings, while maintaining the proper 6 ft distancing right up to the classroom door

Breaking any of these rules may result in your class being delayed or canceled!

CE 205 Seating Chart for Face to Face Students



- **Enter the Civil Engineering building from the double doors on the east or west sides.**
- **Come up the central stairs to CE 205, come in the south door, and find a seat.**
- **Sign the signature page and include your seat number.**
- **Leave the room as directed through the north door.**
- **Go around the hall to the right then go down the north stairs and leave the building by the exit door on the northeast corner of the building.**
- **If you have another class in the CE building, repeat the cycle above.**

CE 5360 Open Channel Hydraulics/CE 4353 Design of Hydraulic Systems
Fall 2020

Meetings: 3:00-4:20 p.m. MW, CIV 205.
Instructor: Ken Rainwater, Ph.D., P.E., BCEE, D.WRE. Phone 834-7775, office CE 117.
Office hours: 9-11:30 M-Th, or by appointment.
Text: *Open Channel Hydraulics, 2nd Ed.*, by Sturm, other materials handed out electronically.

Course Schedule

Class	Dates	Topics and **Events**
1	8/24	Ch. 1 (Basic Principles)
2	8/26	Ch. 2 (Specific Energy Definitions [2.1-2])
3	8/31	Ch. 2 (Specific Energy Applications [2.3-2.7])
4	9/2	Ch. 2 (Weirs [2.8])
5	9/7	**Labor Day**
6	9/9	Ch. 3 (Momentum Definition and Applications [3.1-3.3]
7	9/14	Ch. 3 (Momentum Applications [3.4-3.6])
8	9/16	Ch. 3 (Momentum Applications [3.4-3.6])
9	9/21	Ch. 4 (Uniform Flow Definitions [4.1-5])
10	9/23	Ch. 4 (Uniform Flow Applications [4.6-4.12])
11	9/28	Ch. 4 (Uniform Flow Applications [4.6-4.12])
12	9/30	Ch. 4 (Uniform Flow Applications [4.13-4.18])
13	10/5	**Exam 1 (Chs. 1-3)**
14	10/7	Ch. 4 (Uniform Flow Applications [4.13-4.18])
15	10/12	Ch. 5 (Gradually Varied Flow Definition and Applications [5.1-5.7])
16	10/14	Ch. 5 (Gradually Varied Flow Definition and Applications [5.1-5.7])
17	10/19	Ch. 5 (GVF Applications [5.8-5.10])
18	10/21	Mays Ch. 16 (Culvert Design)
19	10/26	Mays Ch. 16 (Other Hydraulic Structures)
20	10/28	Mays Ch. 16 (Other Hydraulic Structures)
21	11/2	HEC-RAS Introduction (includes selected topics from Ch. 9)
22	11/4	HEC-RAS Introduction (includes selected topics from Ch. 9)
23	11/9	HEC-RAS Application
24	11/11	**Exam 2 (Chs. 4,5,16)**
25	11/16	HEC-RAS Application
26	11/18	Mays Ch. 18 (Sediment Transport)
27	11/23	Hydraulic Profiles in Wastewater Plants, **HEC-RAS Application Due**
28	11/25	**Thanksgiving**
29	11/30	Hydraulic Profiles in Wastewater Plants
30	12/2	Review

Final Exam: Monday, December 7, 4:30 to 7:00 p.m.

Course Policy

1. Homework – Six to ten homework assignments will occur during the semester. Students are encouraged to work together on the homework, but each must turn in his/her own paper. All important steps in the solution must be shown for full credit. Tabular calculations are encouraged when appropriate, as long as sample calculations are shown. **Computer spreadsheet software will often be used, and you must turn in *your own work with your name printed on each page*. *Sample hand calculations must be provided to receive credit*.** Due to the nature of engineering course work requiring figures, equations, and unusual symbols, homework solutions are typically handwritten, and the scanned files are posted online. If you require homework solutions accessible by a screen reader, please contact the instructor immediately.

2. HEC-RAS Application –The HEC-RAS application will make use of the U.S. Army Corps of Engineers' software package for modeling constant flows and flood-wave movement through a series of river cross sections, including the presence of a culvert structure. The software and documentation are available free of charge and will be identified at the appropriate time. The tentative project due date is shown. ***PC-based!!! Apple computers must have PC support software like Parallels Desktop ($79.99 for license*** https://www.parallels.com/products/desktop/buy/?pd&new), or similar software.

3. Exams – Two intermediate exams will be given during the semester in the weeks shown. The final may include any new material since the second exam, as well as all previous material. **No make-up exams will be given for simple absence.**

Grading Policy	**CE 4353**		**CE 5360**	
	Homework	25%	Homework	20%
	HEC-RAS	25%	HEC-RAS	25%
	Exams	35%	Exams	35%
	Final	15%	Final	15%
	Total	100%	Review	5%
			Total	100%

ADA STATEMENT

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.

ACADEMIC INTEGRITY STATEMENT

Academic integrity is taking responsibility for one's own class and/or course work, being individually accountable, and demonstrating intellectual honesty and ethical behavior. Academic integrity is a personal choice to abide by the standards of intellectual honesty and responsibility. Because education is a shared effort to achieve learning through the exchange of ideas, students, faculty, and staff have the collective responsibility to build mutual trust and respect. Ethical behavior and independent thought are essential for the highest level of academic achievement, which then must be measured. Academic achievement includes scholarship, teaching, and learning, all of which are shared endeavors. Grades are a device used to quantify the successful accumulation of knowledge through learning. Adhering to the standards of academic integrity ensures grades are earned honestly. Academic integrity is the foundation upon which students, faculty, and staff build their educational and professional careers. [Texas Tech University ("University") Quality Enhancement Plan, Academic Integrity Task Force, 2010]

RELIGIOUS HOLY DAY STATEMENT

"Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. A student who is excused under section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

CECE Departmental Calculator Policy for Exams

Only NCEES-approved calculators will be permitted during tests. Your test will be collected, and your grade will be zero if you are using a non-approved calculator. If you are unsure about your calculator, it is your responsibility to check with the instructor. Approved calculators include the following.

- Hewlett Packard – HP 33s and 35s
- Casio – All FX 115 and FX-991 models
- Texas Instruments – All TI 30X and TI 36X models

Laptops/Cell Phones/etc.

Calculators may be used during lectures and exams. Phones, laptops, or other personal electronics are not permitted during lectures or exams, so leave them in your bag in the off or silent mode.

ABET Outcomes Addressed by CE 4353

Type	Outcome	Assessment
ABET General Engineering Student Learning Outcomes	(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	application of fluid mechanics principles and computer modeling of open channel flow
	(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	design of open channels of various shapes and bed materials, selection of culvert design for required flow
	(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	application of HEC-RAS for open channel flow modeling and assorted spreadsheet calculations
ABET Civil Program Criteria	(v) proficiency in water resources engineering	applications of fluid mechanics and open channel flow principles for water transmission
	(vii) design a system, component, or process in more than one civil engineering context	design of open channels of various shapes and bed materials, selection of culvert design for required flow
ABET Environmental Program Criteria	(iv) an ability to perform engineering design by means of design experiences integrated throughout the professional component of the curriculum	design of open channels of various shapes and bed materials, selection of culvert design for required flow