CENG 3361 Syllabus
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1. Welcome to CENG 3361 (Applied Engineering Hydrology and Hydraulic Design). We will meet according to the course schedule (see page 8) which also includes the course topics. The course objectives are found at the end of this Syllabus.

2. Course schedule:
Lecture: Monday and Wednesday at 9:05-10:00 am in room C204
Lab section 1: Monday 2:30-5:15 pm in room D114
Lab section 2: Friday 9.05-11:50 am in room D114.
If you miss a scheduled class, you will still be responsible for the material.

3. Course website: UT Tyler's Canvas website.

4. **This is a face-to-face, in-person course.** However**,** Due to COVID-19 and personal circumstances the class will be mainly a **Hybrid/Blended Course:** synchronous (real-time face-to-face via ZOOM) and asynchronous (material posted on Canvas). However, you will be required to present in person on campus for labs, so please be prepared for such thing and follow HCC COVID-19 regulations.

5. You are welcome to seek additional instruction and I have set aside Office Hours in my schedule for your convenience. Please see the schedule posted on my office door (or on Canvas).

6. Class Room Procedures:

a. I will take attendance randomly – please help me by ensuring the Attendance Sheet is circulated around the classroom.

b. It is a basic principle of professionalism that **"Professionals are not Late."** Please come to class on time and leave on time. Interruption of lecture is not acceptable.

c. Bring study notes, textbook, note-taking material, straight edge and calculator TO EVERY CLASS. You may not borrow or exchange calculators during graded events. If your calculator fails during a graded exercise, I am not responsible to furnish a substitute. Class preparation is your individual responsibility. Please refer to the Calculator Policy.

d. **Textbook: Hydrology and Hydraulic Systems, 4th edition. Ram Gupta; Waveland Press, Inc. ISBN 1-4786-3091-4.** All students are expected to secure a copy of this textbook.

e. Read the chapter assignments before the lecture so that you will be prepared for class discussions. I may have announced and unannounced quizzes over the text assignments if it appears that students are not reading the assigned text materials.

f. **ACADEMIC DISHONESTY:** Representation of other's work as your own will not be tolerated. Cheating on examinations, quizzes, and homework and the false representation of work will be interpreted as academic dishonesty. Academic dishonesty will be subject to disciplinary action as outlined by the UT Tyler Student Guide on Conduct and Discipline. Please refer to the

University of Texas at Tyler current Undergraduate Catalog for academic policies and Manual of Policies and Procedures for Student Affairs (MOPPS, Chapter 8) regarding academic integrity, cheating and plagiarism. Academic dishonesty will not be tolerated. Ignorance of the rules and policies will provide no protection from the consequences.

7. Exams and Grading:

a. Grade Breakout and Cutoffs:

Course Points

Mid-term Exams (2 at 150 each)	300 (30%)
Lab/Project assignment	300 (30%)
Professional Practice	100 (10%)
Final exam	300 (30%)
Course Total	1000 (100%)

Letter grades will be assigned based on the final course grade:

A 90 and above
B 80 to 89.99
C 70 to 79.99
D 60 to 69.99
F below 60

You MAY fail this course, if you earn less than 60% on all Exams or if you fail to earn at least 60% on the Final exam, **regardless of your course grade**. Of course, according to UT Tyler grading policies final grades are only A, B, C, D, F.

b. Hour Exams and Final Exam:

1) The dates for Hour Exams are included in the course schedule. Official reasons for missing an exam include official University participation, family emergency, or other unforeseen circumstance. See policies for Student Absence in this syllabus, Section 11 and Section 12 below. Regardless of the reason you are required to notify the instructor prior to the exam and as early as feasible. You are required to take a make-up Exam, regardless of your reason for missing the scheduled Exam. Report any conflict to me as soon as possible prior to the Exam.
2) All the Exams and the Final are closed book and notes. You are encouraged to use an **NCEES approved calculator. All test questions will be formatted in order to use the same calculator that you MUST use for the FE exam.** Non-approved NCEES calculators may be used for the exams. You will also be allowed the CENG 3361 reference sheet supplied by the instructor for each examination if needed.

    (1) If you are unsure about your calculator, it is your responsibility to check with the instructor for approval.
    (2) It is recommended that additional batteries be carried with you during exams.

3) Register on Canvas because some class material as needed will also be posted to Canvas.

c. **The use of any electronic device (laptop/PDA/Cell Phone/MP3 player/or similar device), during class and exam is prohibited**. Your exam will be collected and your grade will be a zero

if you are caught using a non-approved electronic device/calculators. The use of phones and MP3 players is not permitted during lectures. The second occurrence of phone use, for any reason, may result in the forfeiture of the device. If you plan to record the lectures for your personal use please notify me.

d. Collection of Student Work: Throughout the semester I will collect student work (best, average, and worst) for the ABET course or program outcomes notebooks. This will require me to make a copy of your work, keep your original, and return a copy of the graded work to you. I will not draw attention as to what level of work you accomplished.

e. Embedded indicators of accomplishment of program outcomes: At times throughout the semester, portions of student work will be analyzed to determine if our program is accomplishing stated program outcomes based on established metrics. **If your work is below the minimum established metric, you may be required to repeat the assignment or that portion of the assignment until you achieve the minimum acceptable standard based on the metric.**

8. Homework/Project: Graded and/or Non-graded Homework/Project assignments will be assigned throughout the semester. Students may *discuss* their homework/Project solutions with one another, but each student must submit their own, **independent** solutions (i.e. you may not just copy someone else's homework). **Individual homework must be done individually**. If you receive assistance from a fellow student on a particular problem you must cite that assistance within your solution. The homework due date is marked on the attached schedule sheet. Homework is due *before* class starts. **Late homework assignment will not be accepted**. However, in legitimate cases late assignment may be accepted with prior discussion with your professor (**coordinated late submission**). Homework turned in late, but within one day of the due date, will receive a 25 percent reduction; homework turned in within two days of the due date will receive a 50 percent reduction; homework turned in within three days of the due date will receive a 75 percent reduction. ***No credit will be given for homework turned in more than three days late or after the solution has been published on the course Canvas.***

HOMEWORK FORMAT: The production of a neat, organized, high-quality homework assignment cannot be overestimated nor can its importance to your course grade be overstated. A homework assignment should be something you are proud of and not something hastily "slapped together". Toward this end, considerable emphasis will be placed on not only getting the correct answer but also on how the solution is presented.

As an engineer your goal is to make a clear, logical, and professional presentation of your work. As such both your presentation and the accuracy of your work is important, and both will be graded. It is critical that you show all of your work and leave "foot prints" so that it can be easily followed. No guess work should be required to see what you did. All submissions are due at the beginning of class on the due date. Or submissions may be placed in my office.

a. Homework - Problem Sets (PS)

1) **Use Engineer paper only** with solutions placed in the logical flow of the problem printed on engineering paper; one side only. Clearly present **a brief problem statement or a sketch** with your solution. Clearly and concisely explain each step. For narratives of more than a line or two, use your word processor or the text capability if you are using

MathCAD or Excel. If you are writing out a paragraph or more, you must type it in a word processing package.

Obviously, there are circumstances that will occur and make a timely submission impossible and I will work with you if and when those circumstances legitimately occur.

2) All homework in this course must be properly documented. As you are having your work reviewed it is likely that you might receive help from your classmates, just simply document it. Information from the course textbooks (equations and outlines of procedures), class notes, or me are considered immediately available to all students and need not be acknowledged or documented. **YOU ARE REQUIRED TO ACKNOWLEDGE AND DOCUMENT ALL OTHER ASSISTANCE AND REFERENCES USED.** Documentation will be accomplished in accordance with any manual for writing, footnote or endnote, for papers, but for written homework, just place the documentation right at the point you received help describing who and what assistance.

b. Assigned readings. Doing the assigned reading prior to class will help you to understand the material presented during the instruction and will fill in gaps for things we do not cover (***I will not cover everything***). It will also make you more familiar with terms and concepts to be covered. To help motivate you to do the reading there may be unannounced quizzes that cover the assigned sections of the text.

9. Students Rights and Responsibilities. To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: http://www.uttyler.edu/wellness/StudentRightsandResponsibilities.html

10. Grade Replacement/ Forgiveness and Census Date Policies:
Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at http://www.uttyler.edu/registrar. Each semester's
Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.
Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.
The Census Date is the deadline for many forms and enrollment actions that students need to be aware of. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

11. State-Mandated Course Drop Policy: Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For

purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).

Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions

12. Disability Services: In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning, physical and/or psychiatric disabilities. If you have a disability, including non-visible a disability diagnosis such as chronic disease, learning disorder, head injury or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with the Accessibility Case Manager. If you are unsure if the above criteria applies to you, but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR webpage (http://www.uttyler.edu/disabilityservices/) or the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to saroffice@uttyler.edu

13. Student Absence due to Religious Observance. Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

14. Student Absence for University-Sponsored Events and Activities. If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

15. Social Security and FERPA Statement. It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

16. Emergency Exits and Evacuation. Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do Not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

UT Tyler Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

Students Rights and Responsibilities

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link:http://www.uttyler.edu/wellness/rightsresponsibilities.php

Campus Carry

We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is availableathttp://www.uttyler.edu/about/campus-carry/index.php

UT Tyler a Tobacco-Free University

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, waterpipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visitwww.uttyler.edu/tobacco-free.

Important Covid-19 Information for Classrooms and Laboratories

Students are required to wear face masks covering their nose and mouth, and follow social distancing guidelines, at all times in public settings (including classrooms and laboratories), as specified by Procedures for Fall 2020 Return to Normal Operations. The UT Tyler community of Patriots views adoption of these practices consistent with its Honor Code and a sign of good citizenship and respectful care of fellow classmates, faculty, and staff.

Students who are feeling ill or experiencing symptoms such as sneezing, coughing, or a higher than normal temperature will be excused from class and should stay at home and may join the class remotely. Students who have difficulty adhering to the Covid-19 safety policies for health reasons are also encouraged to join the class remotely. Students needing additional accommodations may contact the Office of Student Accessibility and Resources at University Center 3150, or call (903) 566-7079 or email saroffice@uttyler.edu.

Recording of Class Sessions

Class sessions may be recorded by the instructor for use by students enrolled in this course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with individuals not enrolled in this course unless appropriate consent is obtained from all relevant students. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

Laptops/PDAs/MP3 players/Cell Phones or other electronic devices

- The use of any electronic device, except an approved calculator, is not permitted during exams. Your exam will be collected and your grade will be a zero if you are caught using a non-approved electronic device/calculators. Any instances of a calculator inappropriately used during an exam will be the basis of alleging Academic Misconduct and may result in Failing (F) of the course at the determination of the course's instructor or the basis for a recommendation for expulsion from the University. Any Calculator used during an exam in this course must meet the requirements stated within the policy below.

- **Calculator Policy**

  Only NCEES approved calculators will be permitted during tests and your test will be collected and your grade will be a zero if you are using a non-approved calculator.

  The approved calculators include the following: (Please check the NCEES website for a complete listing, www.ncees.org/exams/calculator-policy/. Examples include but are not limited to:

  - Hewlett Packard – HP 33s, HP 35s, and no others
  - Casio – All FX 115 models
  - Texas Instruments – All TI 30X or TI-36X models.
  - If you are unsure about your calculator, it is your responsibility to check with the instructor for approval.

  At the discretion of the course instructor, any calculator not meeting the requirements stated (especially in the case of a graphing calculator) may be used but only after an inspection of the device and a clearing of all the memory within the device, performed for the instructor at a time immediately prior to the exam. At any time during the exam your calculator is subject to a random search by the instructor. Failure or refusal to clear all memory or to surrender your calculator to search will disqualify you from the exam immediately, unless you can produce a calculator meeting the requirements as stated above.

COURSE OUTLINE and SCHEDULE

Topics Covered

SUBJECTS	LESSONS
Course Introduction	1
Hydrology	15
Hydraulic Structures	10
Exams (includes final)	3
Total Lessons	29

Course Schedule *(Subject to change as needed throughout the semester)*

Lsn #	Special	DATE	Material covered	Text	
1		11-Jan	Course intro and syllabus distribution		
2		13-Jan	Hydrologic Cycle and Budget	Ch. 2.1-2.4	
3		**18-Jan** 20-Jan	**MLK Holiday** Probability and Statistics in Hydrology	Ch 11	
4	Census Date	25-Jan	Precipitation	Ch. 2.5-2.7	
5		27-Jan	Precipitation (IDF)	Ch. 2.8	
6		1-Feb	Evaporation and Transpiration	Ch. 3	
7		3-Feb	Evaporation and Transpiration	Ch. 3	
8		8-Feb	Infiltration and NRCS Curve Number	Ch. 4	
9		10-Feb	Infiltration and NRCS Curve Number	Ch. 4	
10		15-Feb	Runoff	Ch. 9.1-9.2	
11		17-Feb	Rational Method	Ch 16.10	
12		**22-Feb**	**EXAM I**		
13		24-Feb	Hydrographs	Ch. 9.5-9.7	
14		1-Mar	Unit & Synthetic Hydrographs	Ch. 9.8-9.9	
15		3-Mar	Surface Water Flow Measurements	Ch. 8	
			Spring Break 3/8 - 3/12		
16		15-Mar	Stream Flow Measurements	Ch. 8	
17		17-Mar	Introduction to Hydraulic Structures	Handout	
18		22-Mar	Open Channel Flow	Ch. 14	
19		24-Mar	Open Channel Flow	Ch. 14	
20	W day	29-Mar	**EXAM II**	Ch. 13.1-13.5	
21		31-Mar	Weirs	Ch. 13.1-13.5	
22		5-Apr	Weirs		
23		7-Apr	Dams and Spillways	Ch. 13.12-13.18	
24		12-Apr	Dams and Spillways	Ch. 13.12-13.18	
25		14-Apr	Stilling Basins, Energy Dissipaters	Handout	
26		19-Apr	Culverts	Ch. 17.7	
27		21-Apr	Culverts		
28		**26 Apr – 30 Apr**	**Final Exam (follow University Schedule.)**		

Unless otherwise indicated readings are found in the text.

CENG 3361Applied Engineering Hydrology and Hydraulic Design Lab Schedule

Lab Schedule *(Subject to change as needed throughout the semester)*

Week	DATE	Lab #	Material	Lab Due
2			No Lab Meeting – MLK Holiday	
3		1	Hydrologic Cycle as a Mass Balance	
4		2	Statistics and Probability	Lab 1
5		3	Aerial Rainfall and Thessian Method	Lab 2
6		4	Infiltration	Lab 3
7		5	Evapotranspiration	Lab 4
8		6	Stormwater Runoff & Hydrographs	Lab 5
9			**SPRING BREAK NO CLASSES**	
10		7	Varied and Gradual Flow	Lab 6
11		8	Weirs	Lab 7
12		9	Dam, spillway, Stilling Basin trip visit	Lab 8

CENG 3361
Course Objectives:

1. Describe the hydrologic cycle; recognize the various storage and transport pathways in the cycle.
2. Predict runoff from a storm using constant (□-index) loss and variable (SCS Method) loss infiltration methods.
3. Predict runoff from a storm using unit hydrograph methods.
4. Obtain historical flood data using the Internet.
5. Apply flood frequency analysis; use probability concepts and frequency distributions to evaluate flood data.
6. Describe the hydrologic design scale; select a design storm, specifying precipitation depth and distribution.
7. Compute normal depth in a channel.
8. Design an open channel.
9. Analyze open channel structures such as weirs and spillways.
10. Use the rational method to compute the peak discharge for an urbanized watershed.
11. Use spreadsheets and math solving problems as a tool to perform the mathematical operations required in hydrological and hydraulic analysis and design.