

The University of Texas at Tyler
Department of Civil, Construction Engineering and Management
CENG 4115-032L: Senior Design 1
Fall 2025
Course Syllabus

COURSE TITLE: Senior Design 1

NUMBER AND SECTION: CENG4115-032L

SCHEDULED CLASS DAYS AND TIMES: Fridays at 02:30 noon to 05:30 pm,

(August 25th to December 13th), 2025

ATTENDANCE: This is an in-class course, so attendance is required; attendance will be taken at the beginning of each class. The University of Tyler policy for excused absences will be followed. The University of Tyler attendance policy will be uploaded to the canvas.

VENUE: Houston Engineering Center C204

INSTRUCTOR: Abbas Al-Omari, Ph. D.

OFFICE LOCATION: Houston Engineering Center (HEC) B 230.

PHONE NUMBER:

EMAIL aalomari@uttyer.edu,

OFFICE HOURS:

12:00 – 01:00 Wednesdays, and

10:300 – 11:30 Thursdays.

If a meeting outside office hours is needed, please send an e mail to fix an appointment, or try dropping by if at HEC.

COURSE WEBSITE

UT Tyler's Canvas website will be used to manage course assignments, solutions, handouts, announcements and other related material and events. Therefore, students are kindly required to check the Canvas frequently.

CATALOG DESCRIPTION OF THE COURSE

Problem definition, project planning and scheduling, follow-up and control techniques. Results in presentation and plan for senior capstone design project. Multidisciplinary teams will work on design problems defined in cooperation with representatives from engineering firms, industry, or government organizations when possible. Three hours of Design Studio Lab per week. Corequisite: CENG4412. Prerequisite: Department Chair approval and CMST1315.

LEARNING OUTCOMES

1. Students apply the knowledge and skills acquired during their studies at UT Tyler including both technical and interpersonal skills and professional judgment, to solve real-world, complex civil engineering problems in a creative and sustainable way.
2. Students develop a basic understanding of modeling natural and engineered systems and apply this knowledge to their senior design project.
3. Students identify and adhere to relevant federal, state, and city design codes, guidelines, and regulations in their senior design project."
4. Students effectively communicate with relevant stakeholders, including governmental agencies, regulatory bodies, consulting firms, and end users, to incorporate their concerns into their senior design project.
5. Students work collaboratively within a team to integrate the various components of their senior design project and achieve its overall goals.
6. Students assess the environmental impacts of civil engineering projects, such as carbon emissions, and propose sustainable solutions to mitigate them.
7. Students prepare a professional report that presents the findings of their senior design project in a well- structured, documented, informative, and persuasive manner.
8. Students learn to present the findings of their senior design projects professionally to an audience of industry professionals.

PREREQUISITES

Department Chair approval and CMST 1315. Corequisite: CENG 4412. It is recommended to have completed as many of the following core courses as possible:

CENG 3325 – Structural Analysis

CENG 3336 – Soil Mechanics

CENG 3351 – Transportation Engineering

CENG 3361 – Engineering Hydrology

CENG 3371 – Introduction to Environmental Engineering

CENG 4339 – Civil Engineering Construction Management CENG 2336

REQUIRED TEXT

No text is required for this course; however, the students may refer to relevant textbooks they have used in their senior design courses.

GRADING

Attendance of class and weekly meetings, 10%,

Professional practice, 5%

Ratliff Relay, 10%

Assignments (homework and quizzes), 10%

Reports, 65%,

REPORTS

First report: Introduction and description of the project/case study, 15%.

Second report: Methodology, data collection, and data quality, software selection and training, 15%.

Final report: One major component of the project should be finished, summary and conclusion, 35%.

Reports' grades will be divided between the written report and the oral presentation.

GRADING SCALE

Numeric grade	Letter grade
90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
< 60	F

CRITERIA FOR REPORTS GRADING

The report will be graded on the following bases:

Report structure, completion and logical flow of information

Reports should include:

- Introduction which should provide justification for the project/the case study, and its importance,
- Brief review of the pertinent literature,
- Detailed methodology which may include, data collection, conceptual model, software selection and implementation, stakeholders' meetings and interviews,
- Timeline of the project, and
- Expected outcomes and findings.

Important: Grades for group work will be adjusted based on the relative contribution of each team member.

Language

The language should be free of grammatical and spelling errors,

Referencing: References should be included where needed within the report,

The oral presentation will be graded on the following bases:

- Logical flow of information,
- Clarity and readability of the slides,
- Language, the slides should be free of grammatical and spelling errors,
- Addressing the audience,
- Ability to answer questions, and
- Time management,

Note:

- No makeup work or extra credit allowed/granted at the end of, or during, the semester unless allowed/granted to everyone by the instructor. All assignments must be turned in by the deadline to receive the credit.
- According to UT Tyler regulations, a student may fail a course if he/she earned less than 65% on all Exams or if he/she fails to earn at least 50% on the final exam, regardless of your course grade.

EXAMS

No written exams will be conducted in this course.

QUIZZES

Assigned and unassigned quizzes will be conducted in this course.

HOMEWORK

This is not a regular course; however, homework will be given to ensure timely progress of the project and to help understand the different components of a certain design project.

Homework should be uploaded to Canvas as a single pdf file or (.doc or docx) by the deadline. If for a reasonable excuse you are not able to submit the homework by the deadline, you should let the instructor know before the deadline, otherwise, late homework policy will apply. Solutions should be presented in a clear methodical manner. Homework solutions will be posted on Canvas after the deadline.

Late homework submission policy:

The following rules apply to late submission of homework:

1. 0-24 hours late, a deduction of 25% of the earned grade applies.
2. 24-48 hours late, a deduction of 50% of the earned grade applies.
3. 48-72 hours late, a deduction of 75% of the earned grade applies, and
4. More than 72 hours late, No credit.

REPORTS

Reports should be uploaded to the Canvas as a single pdf file or (.doc or docx) no later than 12:00 midnight on the due date. Late submissions rules that applies to homework, applies to reports as well.

PLAGIARISM

All submitted reports will be checked for similarity; no more than 10% similarity is allowed. If a higher percentage is found, the grade will be down scaled.

ARTIFICIAL INTELLIGENCE TOOLS

You can use AI programs (ChatGPT, Copilot, etc.) in this course. These programs can be powerful tools for learning and other productive pursuits, including completing assignments in less time, helping you generate new ideas, or serving as a personalized learning tool. However, your ethical responsibilities as a student remain the same. You must follow UT Tyler's Honor Code and uphold the highest standards of academic honesty. This applies to all uncited or improperly cited content, whether created by a human or in

collaboration with an AI tool. If you use an AI tool to develop content for an assignment, you must cite the tool's contribution to your work.

PROFESSIONAL PRACTICE

5% of the grade in this course is allocated to the students' professional practice, which includes participation in two of the many UT Tyler Students' associations activities. Students should show proof of their participation in the report by a picture. The picture should show the involvement of the student in the activity. For example, it should not be for having lunch within the activity. In addition, the student should be easily identified by the picture; for example, the picture should not show the back view of the student. The report form will be uploaded to the course canvas.

LAPTOPS/PDAS/MP3 PLAYERS/CELL PHONES OR OTHER ELECTRONIC DEVICES

Does not apply to this course.

CALCULATOR USE POLICY

Does not apply to this course.

CELL PHONE

The use of cell phones is strictly prohibited during the class.

LAST DAY TO WITHDRAW

The last day to withdraw from this course is **November 3th**.

CENSUS DATES

The university requires that instructors report students' attendance to the register at various times in the semester. Therefore, attendance will be reported to the registrar's office on **September 08th**.

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 these actions from others.

RECORDING OF CLASS SESSIONS

Class sessions may be recorded by the instructor to be used by students 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.

ACADEMIC MISCONDUCT

Plagiarism of reports and cheating will be interpreted as academic misconduct and will not be tolerated. 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 these rules and policies

provides no protection from the consequences.

COLLECTION OF STUDENT WORK

Throughout the semester, sample students' work (best, average, and worst) will be collected for the ABET outcomes notebooks. This will require me to make a copy of these samples, keep the original and return the copy of the graded work to the students. No attention to what level of work the student accomplished will be paid.

FOODs, DRINKS and SNACKS

FOODS and SNACKS are strictly prohibited in the classroom.

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.php>

GRADE REPLACEMENT/FORGIVENESS AND CENSUS DATE POLICES

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 such 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

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.

DISABILITY/ACCESSIBILITY SERVICES

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University of Tyler at Texas offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible a diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or you have a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with Cynthia Lowery, Assistant Director Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices>, the SAR office located in the University Center, # 3150 or call 903.566.7079.

STUDENT ABSENCE DUE TO RELIGIOUS HOLIDAYS 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.

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.

ABSENCE FOR PREGNANT AND PARENTING STUDENTS

This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the support afforded pregnant students includes excused absences. Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive this support. Students should reach out to the Parenting Student Liaison at parents@uttyler.edu and also complete the [Pregnant and Parenting Self-Reporting Form](#).

MILITARY AFFILIATED STUDENTS

UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make faculty members aware of any complications as far in advance as possible. Faculty members are willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The [Military and Veterans Success Center \(MVSC\)](#) has campus resources for military-affiliated students. The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.

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.

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 the University Police, Fire department, or Fire Prevention Services.

STUDENT STANDARDS OF ACADEMIC CONDUCT

Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. "Cheating" includes, but is not limited to:

- Copying from another student's test paper;
 - Using, during a test, materials not authorized by the person giving the test;
 - Failure to comply with instructions given by the person administering the test;
 - Possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
 - Using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
 - Collaborating with or seeking aid from another student during a test or other assignment without authority;
 - Discussing the contents of an examination with another student who will take the examination;
 - Divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructor has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
 - Substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
 - Paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
 - Falsifying research data, laboratory reports, and/or other academic work offered for credit;
 - Taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
 - Misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.
- ii. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.

- iii. “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.
- iv. All written work that is submitted will be subject to review by Safe Assign TM, available on Blackboard. UT Tyler Resources for Students.
 - [UT Tyler Writing Center](#) (903.565.5995), writingcenter@uttyler.edu
 - [UT Tyler Tutoring Center](#) (903.565.5964), tutoring@uttyler.edu
 - The Mathematics Learning Center, RBN 4021 is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
 - [UT Tyler Counseling Center](#) (903.566.7254)

UT TYLER A TOBACCO-FREE UNIVERSITY

All forms of tobacco are not 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, water pipes (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, quit lines, and group support. For more information on cessation programs please visit www.uttyler.edu/tobacco-free.

CAMPUS CARRY

We respect the right and privacy of students 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 available at <http://www.uttyler.edu/about/campus-carry/index.php>.

CENG 4115 – 032L Fall 2025 Course Syllabus
(Date: Aug 25, 2025. This version supersedes all earlier versions)

COURSE SCHEDULE *					
Week #	Date	Topic	Readings	Homework Assigned	Assignment Due on
Week 1	08/29	Course Introduction and syllabus presentation to the students Introduction to Senior Design projects and groups selection	Syllabus		
Week 2	09/05	Individual group meetings start; introductory material is presented To the individual groups to help them start their projects	Orientation for IDEA STUDIO at West Houston Institute		
Week 3	09/12	Individual group meetings; introductory material is presented To the individual groups to help them start their projects	Selected material related to the individual projects		
Week 4	09/19	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 5	09/26	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 6	10/03	All class meeting Presentation of the first report,	Selected material related to the individual projects	First report due	
Week 7	10/10	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 8	10/17	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 9	10/24	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 10	10/31	All group meeting: Presentation of the second report	Selected material related to the individual projects	Second report due	
Week 11	11/07	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 12	11/14	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 13	11/21	Individual group meetings; discussion of progress and encountered challenges	Selected material related to the individual projects		
Week 14	11/24	Thanks-giving break			
Week 15	12/05	All group meeting: Presentation of the final report		Final report due	
Week 16	12/08-12/12	Final exams week			

* Minor changes to the course schedule may occur; if so, these changes will be announced on canvas.