

The University of Texas at Tyler  
Department of Civil Engineering and Construction Management  
CENG 4315-031L: Senior Design 2  
Spring\_2025  
Course Syllabus

**COURSE TITLE:** Senior Design 2

**NUMBER AND SECTION:** CENG4315-031L

**SCHEDULED CLASS DAYS AND TIMES:** Fridays at 12:00 noon to 04:45 pm, (Jan. 13 to May 03), 2024.

**ATTENDANCE:** This is an in-class course, so attendance is required; attendance will be taken at the beginning of each class.

**VENUE:** Houston Engineering Center C204.

**INSTRUCTOR:** Abbas Al-Omari, Ph. D.

**OFFICE LOCATION:** Houston Engineering Center (HEC).

**PHONE NUMBER:**

**EMAIL:** aalomari@uttyer.edu

**OFFICE HOURS:** 11:00 am – 12:00 noon, Wednesdays and Thursdays; if a meeting outside office hours is needed, please send an e mail to fix an appointment, or drop by.

### **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.

### **CATALOGUE DESCRIPTION OF THE COURSE**

The senior design project, which was proposed and approved in CENG 4115, continues to completion. This capstone design project builds on previous course work, includes all stages of the design process, and considers a variety of realistic constraints such as manufacturability and sustainability; economic factors; and environmental, safety and reliability issues. Preparation and presentation of final oral and written reports are required. Nine hours of Design Studio per week.

### **LEARNING OUTCOMES**

Upon completion of this course the students will learn:

1. How to use the knowledge they gained during their study at UT Tyler, soft and hard skills, professional judgment, to solve a real-life, ill determined, civil engineering problem in a creative and sustainable way,

2. The implementation of relevant software to their senior design project; where relevant, the students will be introduced to modeling engineered and natural systems,
3. The implementation of the relevant engineering, federal and state design codes, guidelines and regulations,
4. How to effectively communicate with relevant stakeholders, i.e., governmental agencies, regulating agencies, private sector, and end users of their design project,
5. How to work effectively and coordinate the different components of a project within a team,
6. How to assess environmental impacts of civil engineering projects such as carbon emissions and propose ways to address them.
7. How to write a professional report that present their findings in an engineering, documented, informative, and convincing manner,

## **PREREQUISITES**

CENG 4115: Senior Design 1

CENG 4109: Preparation for Professional Practice in Civil Engineering, or

ENGR 4109: Senior Seminar

## **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%.

Midterm report that corresponds to 65% completion of the SD project, 10%.

Midterm report presentation, 10%.

Professional practice, 5%.

Final written report including all engineering drawings, 30%.

Presentation of the final project report, 25% .

Poster preparation and presentation, 10%.

## **REPORTS**

Midterm report which corresponds to 65% completion of the SD project,

Final written report which shows the findings and details of the design project, in addition to all engineering drawings needed for the implementation of the project,

## **GRADING SCALE**

<b>Numeric grade</b>	<b>Letter grade</b>
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:

The updated final report for Senior Design 1,

The findings and details of the Senior Design Project,

A section that discusses how your design meets specific SDGs,

Engineering drawings needed for the implementation, and

Reports will be graded based on completion, structure, design quality, and logical flow of information.

**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:

- The presentation should reflect the contents of the report,
- Logical flow of information,
- Clarity and readability of the slides,
- Clarity and readability of the illustrations,
- Language, the slides should be free of grammatical and spelling errors,
- Addressing the audience,
- Ability to answer questions,
- Time management,
- Attendance,
- Attitude and appearance of the presenter,

### 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 fail to earn at least 50% on the final exam, regardless of your course grade.

## EXAMS

No written exams will be conducted in this course. A final presentation is required.

## QUIZZES

No quizzes will be conducted in this course.

## **HOMEWORK**

No homework will be conducted in this course.

**Homework should be uploaded to Canvas as a single pdf file or (.doc or docx) no later than 5:00 pm on the due date.** All homework **must be submitted on engineering paper** (you can buy them in the Civil Engineering Department Office for \$5.00, at Office Depot, or online). Homework solutions not submitted on engineering paper will receive 90% of the graded credit only. 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, and
3. 48-72 hours late, a deduction of 75% of the earned grade applies,
4. More than 72 hours late, No credit.

## **PLAGIARISM**

All submitted reports will be checked for plagiarism; no more than 10% is allowed. If a higher percentage is found, an investigation will be made, if found copied, a failing grade will be assigned.

## **ChatGPT**

It is strictly prohibited to use text as obtained by ChatGPT; material generated by ChatGPT is not hundred percent accurate, nor up to date; so, material generated by ChatGPT should be appropriately edited and modified by the students. Reports will be checked for inclusion of ChatGPT generated material. If a report is found more than 10% ChatGPT generated, a failing grade will be given.

## **PROFESSIONAL PRACTICE:**

5% of the grade in this course is allocated to the students' professional practice, which includes participation in a minimum of two of UT Tyler Students' associations activities. Students should show proof of their participation in the report with 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 in the picture; for example, the picture should not show the back view of the student. The report form should 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 without penalty is February 5<sup>th</sup> 2025.

## **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 January 27<sup>th</sup> 2025.

## **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 permission.

## **ACADEMIC MISCONDUCT**

Plagiarism of homework and cheating on examinations 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 requires making a copy of these samples, keeping the original and returning the copy of the graded work to the students. No attention to what level of work the student accomplished will be paid.

## **FOOD, DRINKS and SNACKS**

FOOD 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 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](mailto: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](mailto: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 instructors 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](http://www.uttyler.edu/writingcenter) (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
    - [UT Tyler Tutoring Center](http://www.uttyler.edu/tutoring) (903.565.5964), [tutoring@uttyler.edu](mailto: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](http://www.uttyler.edu/counseling) (903.566.7254)

## **UT TYLER IS 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, 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](http://www.uttyler.edu/tobacco-free).



## **CAMPUS CARRY**

We respect the rights 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 available at <http://www.uttyler.edu/about/campus-carry/index.php>.

<b>COURSE SCHEDULE *</b>					
<b>Week #</b>	<b>Date</b>	<b>Topic</b>	<b>Readings</b>	<b>Homework Assigned</b>	<b>Assignment Due on</b>
Week 1	01/10	Course Introduction and syllabus presentation to the students Scheduling of group meetings	Syllabus		
Week 2	01/17	Each group submits and presents its time schedule, and detailed list of deliverables			
Week 3	01/24	Individual group meetings: discussion of progress and encountered challenges			
Week 4	01/31	Individual group meetings: discussion of progress and encountered challenges			
Week 5	02/07	Individual group meetings: discussion of progress and encountered challenges			
Week 6	02/14	Individual group meetings: discussion of progress and encountered challenges			
Week 7	03/21	Individual group meetings: discussion of progress and encountered challenges			
Week 8	02/28	Individual group meetings: discussion of progress and encountered challenges			
Week 9	03/07	<b>Midterm report submission and presentation</b>		<b>Midterm report due</b>	
Week 10	03/14	Individual group meetings: discussion of progress and encountered challenges			
Third	03/21	<b>Spring break</b>			
Week 12	03/28	Individual group meetings: discussion of progress and encountered challenges			
Week 13	04/04	Individual group meetings: discussion of progress and encountered challenges			
Week 14	04/11	Individual group meetings: discussion of progress and encountered challenges			
Week 15	04/18	<b>Final report submission and presentation</b>		<b>Final report due</b>	
Week 16	04/25	<b>Poster session</b>			

\*Changes to this course schedule may take place during the semester, in which case these changes will be announced in the class.