

MENG 4215 – Senior Capstone Design I
Course Syllabus

Semester / Year	Fall 2022
Catalog Description	The first of a sequence of two senior courses including a capstone engineering project that entails the theoretical or experimental investigation of design problems. The nature and scope of the project are determined by the student in consultation with the instructor and depend upon the facilities available. A written technical report is required as part of the courses' outcomes. All seniors meet weekly to discuss their projects as teams and with their supervisors. One-hour lecture and 3 hours laboratory.
Prerequisites	EENG 3304, MENG 3309, MENG 3316, MENG 3211, and SPCM 1315
Section number	Tyler Main Campus (TYL): Lecture 01, Labs: 01, 02 Houston Engineering Center (HEC): Lecture 30, Labs: 30, 31, 33, 34
Instructor(s) name(s)	Mr. A. Al-Shalash, Dr. N. Barakat, Dr. A. Garcia, and Dr. Rizvi, Dr. M. Salim.
Contact info	Contact the following course coordinator if you cannot find the contact info for your specific team advisor: Dr. N. Barakat (Senior Project Board chair) Dr. M. Salim (TYL coordinator) Mr. A. Al-Shalash (HEC coordinator)
Class Type / Location	face-to-face and/or zoom lecture and lab/studio – Both TYL Campus and HEC Campus – Location TBD on Canvas
Class Time	Lecture: Tuesday 11:00 AM, Lab Tuesday: 2:00 – 4:45 PM
Office Hours	TBD
Credits	2
Required Textbook	None. A handbook will be provided electronically. The equivalent of the price of a typical engineering textbook will be required as a contribution from each student for material needed to execute the assigned project.
Optional References	TBD
Additional requirements	This course involves dealing with multiple non-traditional aspects such as, but not limited to, external entities, financial aspects, and non-disclosure agreements. Therefore, students are required to agree to, sign on, and comply with all related Senior Capstone Design policies.
Instruction / Evaluation Method	Lecture, discussion, assignments, Teamwork and interaction, and projects

Grading Policy / Scale	<p>Grading in this course will be based on input from the advisors and sponsors, as well as other involved faculty and individuals as appropriate. Consistent progress and professional behavior during the course/project are expected. <u>A minimum score of 70% in each element of the following list is MANDATORY to succeed and pass the course.</u></p> <ul style="list-style-type: none"> - Assignments and other course requirements 15% - Documentation: Reports, Poster, Video, etc. 30% - Ethics Quiz 10% - Individual evaluation (Faculty advisor, peer, etc.) 15% - Scope Presentation 10% - Design reviews 20% <p>- In addition, successful registration of senior design II MENG 4216 is also required to pass this course</p> <p>Scale: A => 90, B => 80, C => 70, D => 60, F < 60.</p>
Important events / dates	<p>Census date: Sep 2nd Last day to withdraw: Nov 4th</p>
Attendance / Makeup policy	<p>Regular attendance is imperative if you want to do well in this course. Therefore, any student who incurs three unexcused absences or more during the 15-week semester from any lecture or team event will receive an instant F grade for the course. In case you have an excused absence from a class or event, it is your responsibility to keep up with the class work or assigned tasks and be informed of all announcements made in the class on homework, tests etc. No makeup!</p>
Course Learning Outcomes / ABET & PEOs relation	<p>By the end of both senior design courses, students will be able to:</p> <ol style="list-style-type: none"> 1. Apply knowledge and skills acquired in the undergraduate engineering curriculum in an integrated culminating design project experience to articulate and solve a complex engineering problem. SO1 2. Generate and implement solutions to an engineering problem with realistic constraints and various considerations. SO2 3. Implement and manage a typical life cycle of an engineering design and build project in a structured interdisciplinary team environment, with various real constraints. SO5 4. Recognize and consider the ethical and professional responsibility as well as societal, environmental, and global impact of engineering solutions. SO4 5. Utilize various oral and written communication skills to reach a wide audience throughout an engineering career.

Tentative Topics	<ol style="list-style-type: none"> 1. Creativity and design methodologies 2. Teambuilding 3. Leadership 4. Economic justification 5. Codes and standards 6. Project management 7. Conflict resolution 8. Enhanced communication techniques
Other	TBD

University, College, and Department Policies:

1. Modifications

The instructor reserves the right to change this syllabus partially or fully at any point in time. Sufficient time and notice will be provided to the class before the activation of the changes.

2. Diversity Statement

Your learning experience in this class is of the utmost importance to me. We all come from diverse backgrounds and experiences, but we are all here for the same goal to further our education and achieve our career goals. Diversity is a good learning tool brought by all students. I intend to conduct this course in a manner respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, religion, race, and culture. I am committed to create an inclusive learning environment in class, so please help me do so by following class norms/guidelines and adhering to the university policies below. All suggestions are welcomed throughout the course and always remember our common goal of learning.

3. Rights

The Department of Mechanical Engineering reserves all rights to publish and advertise products from the Senior Design series of courses including, but not limited to, Documents, Reports, Posters, Videos, and Presentations, which may include pictures of students, with arrangement to protect IP rights of the sponsors of projects.

4. 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.

5. 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, or material which has been submitted within a different course without explicit approval of the instructor, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

i. "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, or devices and instruments allowing access to materials, which are not authorized by the person giving the test, such as class notes or specifically designed “crib notes” as well as cell phones, to name a few. 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 or person during a test or other assignment without explicit authorization;
 - 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, or removing material from the exam location, 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 plagiarism software.
- v. Penalty for any related infractions will be decided at the discretion of the instructor including, but not limited to, granting of a failing grade in part or the course or in the entire course.

6. 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>

7. Important Covid-19 Information for Classrooms and Laboratories

It is important to take the necessary precautions to ensure a healthy and successful year. UT Tyler continues to urge you to protect yourselves against the flu, COVID, and any new threats that may be developing. Be diligent about preventive measures such as washing hands, covering sneezes/coughs, social distancing, and vaccinations, which have proven to be successful in slowing the spread of viruses. Encourage those who don’t feel well to stay home, and if they show symptoms, ask them to get tested for the flu or COVID. Self-isolation is important to reduce

exposure ([CDC quarantine/isolation guidelines](#)). Please work with your faculty members to maintain coursework and please consult [existing campus resources](#) for support.

8. 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.

9. 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 available at <http://www.uttyler.edu/about/campus-carry/index.php>

10. 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, 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, quitlines, and group support.

For more information on cessation programs please visit www.uttyler.edu/tobacco-free.

11. 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 of which students need to be aware. 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

12. 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.

13. 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 Texas at Tyler offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including a non-visible 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 of Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.utt Tyler.edu/disabilityservices>, the SAR office located in the University Center, # 3150 or call 903.566.7079.

The University of Texas at Tyler has a continuing commitment to providing reasonable accommodations for students with documented disabilities. Like so many things this Fall, the need for accommodations and the process for arranging them may be altered by the COVID-19 changes we are experiencing and the safety protocols currently in place. Students with disabilities who may need accommodation(s) in order to fully participate in this class are urged to contact the Student Accessibility and Resources Office (SAR) as soon as possible, to explore what arrangements need to be made to ensure access. During the Fall 2020 semester, SAR will be conducting all appointments via ZOOM. If you have a disability, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler> and fill out the New Student Application. For more information, please visit the SAR webpage at <http://www.utt Tyler.edu/disabilityservices> 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.

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.

17. 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, this 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)