

The University of Texas at Tyler
Department of Civil and Construction Engineering and Management

CENG 5350|CENG 4350 - Topics In Civil Engineering: Asphalt and Bituminous Materials
Course Syllabus (Spring 2026)

Instructor: Dr. Mayzan Isied

Office: Ratliff Building South (RBS) 1009

Office Phone: (903) 565-5872

Email: Misied@uttyler.edu -*The best way to contact me is by email*

Office Hours: Tuesday/Thursday 11 AM – 12:30 PM

By appointment

Lecture Room for CENG 5350: Ratliff Building North 03038/ Houston Engineering Ctr A216

Lab Rooms for CENG 5350: Ratliff Building South 1032 and Ratliff Building South 1024

Exam Room for CENG 5350 & CENG 4350: Ratliff Building North 03038/ Houston Engineering Ctr A216

Day: Monday/Wednesday

Time: 2:30 PM - 3:55 PM

Student Learning Outcomes

Students completing the class will demonstrate the ability to:

- Describe the fundamental properties and behavior of asphalt cements and emulsions;
- Describe the engineering properties of mineral aggregate used in asphalt mixtures;
- Describe the fundamental properties and behavior of asphalt mixtures;
- Describe Superpave binder test methods and analyze their results;
- Perform Superpave volumetric mixture design analysis; and
- Analyze and understand strengths and weaknesses of various performance test methods and models.

Prerequisite

For undergraduate students – CENG 3434 Civil Engineering Materials, Codes and Specifications or equivalent

For graduate students – Graduate standing

Course Website

Canvas will be used to manage the course material for the semester. There you will find homework assignments, solutions, handouts, lesson videos, and other material pertaining to the class. **Please check there regularly.**

Graduate Course Delivery and Meetings

This course is offered as a face-to-face class. For the graduate section (CENG 5350), lecture content will be delivered primarily through recorded lectures and annotated notes posted on Canvas. Graduate students should review the assigned videos and notes each week as if the course was online.

In-person meetings will be scheduled as needed, primarily to introduce and discuss laboratory activities (procedures, data collection, and analysis) and to address questions on the weekly material. When an in-person

meeting is needed, I will notify you at least one week in advance via Canvas announcements. Unless otherwise announced, meetings will occur during the regularly scheduled class time in the room(s) listed in this syllabus. You are responsible for all posted content, deadlines, and assessments whether or not an in-person meeting is scheduled for a given week.

References

- Performance Graded Asphalt Binder Specification and Testing, Superpave Series No. 1 (SP-1), Asphalt Institute, 2001.
- Superpave Mix Design, Superpave Series No. 2 (SP-2), Asphalt Institute, 2001.
- Asphalt Mix Design Methods, MS-2, Asphalt Institute, 2015.

Assignments and weights/point values - Graduate Class

Section Exams (2 at 20% each)	40.00%
Homework Assignments	15.00%
Quizzes	10.00%
Lab Assignments	10.00%
Term Project	20.00%
UT Tyler Lyceum Participation	05.00%

Assignments and weights/point values - Undergraduate Class

Section Exams (2 at 30% each)	60.00%
Homework Assignments	25.00%
Quizzes	15.00%

Grading Scale

A	90% or greater
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	below 59%

Exams

All exams for both the graduate (CENG 5350) and undergraduate (CENG 4350) sections will be administered face-to-face in the exam room listed in this syllabus. Exam dates may be moved up or pushed back depending on the progress of the lectures; the exact date will be announced at least one week in advance via Canvas and will typically be held during our regular class period on a Monday or Wednesday. You can use a basic calculator and instructor-approved reference material. Solutions to exams will NOT be posted. No make-up exams will be given except for medical or other similar hardships where advanced arrangements are made with the instructor, or in case of non-selective medical emergencies with appropriate physician's note or documentation. Other than the circumstances described above, failure to take the exam at the scheduled time will constitute a grade of zero on the exam.

Calculators

A basic calculator is required for this course.

Research Paper as Term Project

Graduate students will complete a term project in the form of a data-driven research paper based on the Long-Term Pavement Performance (LTPP) database. The paper must follow the current Transportation Research Board (TRB) paper format/template provided on Canvas.

Project deliverables (deadlines posted on Canvas) include:

- Project proposal (topic, research question(s), and planned data/analysis)
- Progress check (update on data extraction/analysis and preliminary findings)
- Final paper in TRB format
- Oral presentations: an in-class presentation and an in-person presentation at the UT Tyler Lyceum in April (exact date to be announced).

Assignments

Assignments must be completed in a competent and professional manner. Assignments will be submitted via Canvas. **Homework will be uploaded to Canvas as a PDF.**

Late Work/ Assignment Policy

Late Submissions. It is a basic principle of professionalism that "**Professionals are not late**".

A "COORDINATED LATE" submission occurs when you will miss the suspense for a graded homework assignment, and you contact me in advance. Notification immediately before the submission will not suffice. Point cuts up to the amounts below **may** be assessed for a "COORDINATED LATE" submission:

1. 0-24 hours late, a deduction of 25% of the earned grade
2. 24-48 hours late, a deduction of 50% of the earned grade
3. 48-72 hours late, a deduction of 75% of the earned grade
4. More than 72 hours late No credit. **Assignments must still be submitted.**

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.

Course Policies

Academic Integrity: All students are expected to uphold UT Tyler's standards of academic honesty. Cheating, plagiarism, and any form of academic misconduct will not be tolerated. This means **all work submitted must be your own**. Do not share quiz or exam content with others. For written assignments, properly cite any sources used. Suspected violations will be referred to the Office of Academic Integrity and may result in a zero on the assignment, course failure, or further disciplinary action. When in doubt, ask the instructor if a certain form of collaboration or resource is permitted. Remember that the goal is to learn and demonstrate your own understanding of construction techniques.

Artificial Intelligence Tools Use: UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. **For this course**, the work submitted by students in this course will be generated by themselves. This includes all process work, drafts, brainstorming artifacts, editing, and final products. This extends to group assignments where students must

create collaboratively create the project. Any instance of the following constitutes a violation of UT Tyler's Honor Code: a student has another person/entity do any portion of a graded assignment, which includes purchasing work from a company, hiring a person or company to complete an assignment or exam, using a previously submitted assignment and/or using AI tools (such as ChatGPT).

Respondus LockDown Browser + Webcam (if applicable): Quizzes in this course will be administered through Canvas and will require Respondus LockDown Browser. A webcam will be required only if an assessment is administered remotely. All exams will be administered face-to-face in the classroom listed in this syllabus unless explicitly announced otherwise.

Guidelines (when LockDown is required):

- Choose a quiet, distraction-free environment (or follow in-class proctoring instructions).
- No external resources (books, notes, phones, other devices) are allowed unless explicitly permitted.
- If an issue arises during a test (e.g., technical glitch), notify the instructor immediately with details and screenshots if possible.
- Any attempts to bypass testing restrictions will be considered academic misconduct.

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 available at <http://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, 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.

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 State-Mandated Course Drop Policy

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 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.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.

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 email) 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 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 an 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 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 a non-administered 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 plagiarism software.

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)

Information for Classrooms and Laboratories

Students are strongly encouraged to wear face masks covering their nose and mouth in public settings (including classrooms and laboratories). 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 should stay at home and notify their faculty. 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.

Lecture and Exam Schedule					
Day	Date	Slide Set	Week		
Monday	1/12/26	Introduction	Week 1	Module 1	
Friday	1/16/26				
Monday	1/19/26	Asphalt Pavement Distress	Week 2	Module 2	
Friday	1/23/26				
Monday	1/26/26	Asphalt Binder Chemistry	Week 3	Module 3	
Friday	1/30/26	Traditional Asphalt Specifications			
Monday	2/2/26	Superpave Performance Graded Specifications	Week 4	Module 5	
Friday	2/6/26	Superpave Performance Graded Specifications			
Monday	2/9/26	Superpave Performance Graded Specifications	Week 5		
Friday	2/13/26	Superpave Performance Graded Specifications			
Monday	2/16/26	Superpave Performance Graded Specifications	Week 6	Module 6	
Friday	2/20/26	Climatic Grade Selection			
Monday	2/23/26	Superpave Aggregate Specifications	Week 7	Module 7	
Friday	2/27/26	Superpave Aggregate Specifications			
Monday	3/2/26	Superpave Aggregate Specifications	Week 8	Module 8	
Friday	3/6/26	Volumetric Properties of Compacted Asphalt Mixtures			
Monday	3/9/26	Spring Break	Week 10		
Friday	3/13/26				
Monday	3/16/26	Exam #1	Week 11		
Friday	3/20/26				
Monday	3/23/26	Traditional Mixture Design Methods	Week 9	Module 9	
Friday	3/27/26	Traditional Mixture Design Methods			
Monday	3/30/26	Superpave Asphalt Mixture Design	Week 12	Module 10	
Friday	4/3/26	Superpave Asphalt Mixture Design			
Monday	4/6/26	Recycled Materials in Superpave Mixture Design	Week 13		
Friday	4/10/26	Recycled Materials in Superpave Mixture Design			
Monday	4/13/26	Balanced Mixture Design	Week 14	Module 11	
Friday	4/17/26	Balanced Mixture Design			
Monday	4/20/26	Class Review	Week 15	Module 12	
Friday	4/24/26	Class Review			
Monday	4/27/26	Final exams-Exam #2	Week 16		
Friday	5/1/26				

Lab Schedule	
Date	Topic
2/2/26	Dynamic Shear Rheometer and Rotational Viscometer
2/9/26	Rolling Thin Film Oven and Pressure Aging Vessel
2/23/26	Sieving and Batching Aggregate
2/27/26	Asphalt Mixture Mixing and Compaction
4/3/26	Asphalt Mixture Bulk Specific Gravity & Theoretical Maximum Specific Gravity
4/13/26	Dynamic Modulus Testing
4/17/26	Cyclic Fatigue Testing