

Bituminous Materials

CGN 6506 (Online) Class #: 25345 Section: 0001

Class Periods: T Period 3-4 (9:35 AM – 11:30 AM) R Period 4 (10:40 AM – 11:30 AM)

Location: Online through Zoom

Academic Term: Fall 2020

Instructor:

Mang Tia

tia@ce.ufl.edu

352-294-7768

Office Hours: M, W, F 10:45 AM – Noon Open Office Hour through Zoom

Teaching Assistants

Not Applicable

Course Description

Analysis of strength and deformation mechanism for asphalt concrete, properties, and their effect on flexible pavement performance. Pavement construction and quality assurance methods, testing and evaluation of asphalts and mixture.

Course Pre-Requisites / Co-Requisites

Course in introduction to pavement design.

Course Objectives

To learn the “how” and “why” of the behavior, design, control, evaluation, and construction practices of asphalt concrete and their effects on asphalt pavement performance.

Materials and Supply Fees

Not applicable

Required Textbooks and Software

1. Bituminous Materials and Mixtures by Mang Tia (to be downloaded from the course web page)
2. Lecture Notes for CGN 6506 by Mang Tia (to be downloaded from the course web page)

Recommended Materials

1. Book Title: Hot Mix Asphalt Materials, Mixture Design and Construction
Authors: Brown, Kandhal, Roberts, Kim, Lee, and Kennedy
Publisher: NAPA Research and Education Foundation; 3rd edition (2009)
ISBN-10: 0914313029 ISBN-13: 978-0914313021

Course Schedule

<u>Date</u>	<u>Lecture Topic</u>
Sep 1	Introduction to Asphalt
Sep 3	Tests on Asphalt Cement
Sep 8	Conventional Grading of Asphalt Cement
Sep 10	Asphalt Cutbacks
Sep 15	Asphalt Emulsions
Sep 17	Effects of Asphalt Properties on Performance of Asphalt Pavement

<u>Date</u>	<u>Lecture Topic</u>
Sep 22	Effects of Aggregate Characteristics on Performance of Asphalt Pavement
Sep 24	Marshall Mix Design Method
Sep 29	TEST 1
Oct 1	Hveem Mix Design Method
Oct 6	Effects of Mix Properties on Asphalt Pavement Performance
Oct 8	Mix Design Method by GTM (Topic of presentation and term paper due)
Oct 13	Smith Triaxial Mix Design Method
Oct 15	Superpave Asphalt Tests
Oct 20	Superpave Asphalt Specifications
Oct 22	Superpave Mix Design
Oct 27	Mixing Plant Operation
Oct 29	Asphalt Paving (Outline of presentation and term paper due)
Nov 3	TEST 2
Nov 5	Recycling of Asphalt Pavement
Nov 10	Recycling of Asphalt Pavement
Nov 12	Recycling of Asphalt Pavement
Nov 17	Recycling of Asphalt Pavement
Nov 19	Asphalt Chemistry
Nov 24	TEST 3
Nov 26	Thanksgiving (NO CLASS)
Dec 1	Student Presentations
Dec 3	Student Presentations
Dec 8	Term Paper Due

Student Presentation and Term Paper

Each student will be required to write a 10 to 20 page term paper on a topic related to asphalt technology and to make a 20-minute presentation on the term paper.

Attendance Policy, Class Expectations, and Make-Up Policy

Attendance of the class through Zoom at the right class time is required. Students with full attendance record will earn 2% bonus point. For each unexcused absence, 0.5% penalty point will be taken. For example, a student with 2 unexcused absence will still have 1% bonus point, and a student with 4 or more unexcused absence will have 0 bonus point.

No make-up tests will be given except for medical reasons or unless arrangements have been made prior to tests. A penalty of 10% per school day shall be assessed on materials turned in late. Excused absences must be consistent with university policies in the Graduate Catalog and require appropriate documentation. Additional information can be found here: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homework (1)	5	5%
Tests (3)	75	75%
Presentation	10	10%
Term Paper	10	10%
	100	100%

Grading Policy

Percent	Grade	Grade Points
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
80.0 - 83.9	B	3.00
77.0 - 79.9	B-	2.67
74.0 - 76.9	C+	2.33
70.0 - 73.9	C	2.00
67.0 - 69.9	C-	1.67
64.0 - 66.9	D+	1.33
60.0 - 63.9	D	1.00
57.0 - 59.9	D-	0.67
0 - 56.9	E	0.00

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://gatorevals.aa.ufl.edu/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://gatorevals.aa.ufl.edu/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor

Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Privacy issue with recorded materials:

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Campus Resources:

Health and Wellness

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
<https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
<https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
<https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.