

## Course Syllabus

**CGN 3501C Civil Engineering Materials**

**Fall 2020**

- 1. Catalog Description:** (4 credits) A study of the principal materials used for engineering purposes with special attention to mechanical properties and their importance to the engineer. Hands-on experience in testing of civil engineering materials.
- 2. Co-requisite:** EGM 3520 Mechanics of Materials
- 3. Course Objectives:**
  - a. To understand the physical properties of major construction materials, and to be able to effectively evaluate, select and apply them in civil engineering practice.
  - b. To have knowledge on testing of construction materials and analysis of test data.
  - c. To develop effective lab report writing skills.
- 4. Contribution of course to meeting the professional component:** Not Applicable
- 5. Relationship of course to program outcomes:**
  - a. Design and conduct experiments, as well as analyze and interpret data.
  - b. Design systems and components to meet desired needs.
  - c. Communicate effectively.
- 6. Instructor:** Dr. Mang Tia, Professor of Civil Engineering
  - a. Office location: 265M Weil Hall
  - b. Telephone: (352) 2947768
  - c. E-mail address: tia@ce.ufl.edu
  - d. Office hours: M, W & F 10:45 AM – 12 Noon through Zoom (Zoom meeting ID will be sent to students registered for this course.)
  - e. Class Web site: through e-learning at <http://elearning.ufl.edu/>
- 7. Teaching Assistants:**

Lab coordinator: Othman Alanquri ([othman.k@ufl.edu](mailto:othman.k@ufl.edu))  
Monday lab: Zachary Sumislaski ([zsumislaski@ufl.edu](mailto:zsumislaski@ufl.edu))  
Tuesday lab: Othman Alanquri ([othman.k@ufl.edu](mailto:othman.k@ufl.edu))  
Wednesday lab: Zachary McKinley ([zacharymckinley@ufl.edu](mailto:zacharymckinley@ufl.edu))  
Thursday lab: Zachary Sumislaski ([zsumislaski@ufl.edu](mailto:zsumislaski@ufl.edu))
- 8. Meeting Times:** (Lectures) M, W, & F 9:35 – 10:25 AM through Zoom  
(Labs) M, T, W, & Th 3:00 – 4:00 PM through Zoom
- 9. Class/laboratory schedule:** Three 50-minute lectures and one 3-hour lab per week

**10. Meeting Locations:** Lectures and Labs to be conducted through Zoom

**11. Material and Supply Fees:** \$25

**12. Textbooks and Software Required:**

- a. Course notes for CGN 3501C (to be downloaded from class web site)
- b. Lab notes for CGN 3501C (to be downloaded from class web site)
- c. Bituminous Materials by Mang Tia (to be downloaded from class web site)

**13. Recommended Reading:**

- a. Title: Design and Control of Concrete Mixtures
- b. Author: S. H. Kosmatka & M. L. Wilson
- c. Publication date and edition: 2011, 15<sup>th</sup> Edition
- d. ISBN number: 0-89312-272-6

**14. Course Outline and Lecture Schedule:**

<u>Date</u>	<u>Lecture Topic</u>
Aug 31	Introduction
Sep 2	Aggregates
Sep 4	Aggregates (continued)
<b>Sep 7</b>	<b>LABOR DAY (NO CLASS)</b>
Sep 9	Aggregates (continued)
Sep 11	Portland cement
Sep 14	Portland cement
Sep 16	Fresh concrete
Sep 18	Hardened Concrete
Sep 21	Batching, Mixing & Transporting of Concrete
Sep 23	Placing, Finishing, Curing Concrete
Sep 25	Concreting under Special Conditions
Sep 28	Review for Test No.1
Sep 30	<b>TEST NO. 1</b>
<b>Oct 2</b>	<b>HOMECOMING (NO CLASS)</b>
Oct 5	Concrete Mix Design (Assig. #1)
Oct 7	Concrete Mix Design
Oct 9	Air-Entrained Concrete
Oct 12	Admixtures for Concrete
Oct 14	Special Concretes
Oct 16	Wood

Oct 19	Wood (continued)
<b>Oct 21</b>	<b>TEST NO. 2</b>
Oct 23	Stress-Strain Diagram
Oct 26	Fatigue Behavior
Oct 28	Thermal Stress Analysis
Oct 30	Introduction to Metals
Nov 2	Carbon Steel and Steel Alloys
Nov 4	Non-Ferrous Metals & Corrosion of Metals
Nov 6	Plastics
Nov 9	Plastics (Continued)
<b>Nov 11</b>	<b>VETERANS DAY (NO CLASS)</b>
Nov 13	Introduction to Asphalts
Nov 16	Tests on Asphalts
<b>Nov 18</b>	<b>TEST NO. 3</b>
Nov 20	Conventional Asphalt Specifications
Nov 23	Liquid Asphalts
<b>Nov 25 – 27</b>	<b>THANKSGIVING HOLIDAYS</b>
Nov 30	Asphalt Paving
Dec 1	Asphalt Mixing Plant
Dec 3	Superpave Asphalt Tests
Dec 7	Superpave Asphalt Specification
<b>Dec 9</b>	<b>TEST NO. 4</b>

### **15. Attendance and Expectations:**

Class attendance will be taken. Students with a perfect attendance record will earn 5 bonus points (out of a total of 500). One penalty point will be assessed for each unexcused absence. For example, those with 2 unexcused absences will earn only 3 bonus points, and those with 5 or more unexcused absences will have zero bonus point.

**16. Grading:**

	<u>Points</u>
Test #1	100
Test #2	100
Test #3	100
Test #4	100
Lab reports and Assig.	<u>100</u>
TOTAL	500

**17. Grading Scale:**

<u>Total Points</u>	<u>Grade</u>	<u>% Scale</u>
450.0 - 500	A	90.0 - 100
435.0 - 449.9	A-	87.0 – 89.9
420.0 - 434.9	B+	84.0 – 86.9
400.0 - 419.9	B	80.0 – 83.9
385.0 - 399.9	B-	77.0 – 79.9
370.0 – 384.9	C+	74.0 – 76.9
350.0 - 369.9	C	70.0 – 73.9
335.0 - 349.9	C-	67.0 – 69.9
320.0 - 334.9	D+	64.0 – 66.9
300.0 - 319.9	D	60.0 – 63.9
285.0 - 299.0	D-	57.0 – 59.9
< 2850.0	E	<57.0

“A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**18. Make-up Exam Policy:**

No make-up tests will be given except for medical reasons or unless arrangements have been made prior to tests.

Lab reports and assignments are usually due one week after they are assigned or as specified by the instructor. A penalty of 10% per school day shall be assessed on materials turned in late.

## **19. 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.

## **20. 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/>.

## **21. 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.

## **22. 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.

## **23. 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](mailto: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](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).

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