

Course Syllabus

CGN 3501C Civil Engineering Materials

Fall 2019

- 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 hands-on experience with testing of construction materials.
 - 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) 294-7768
 - c. E-mail address: tia@ce.ufl.edu
 - d. Office hours: M, W & F 10:45 AM – Noon
 - e. Class Web site: through e-learning at <https://lss.at.ufl.edu/> use CANVAS

Teaching Assistants

Lab coordinator: Othman Alanquri (othman.k@ufl.edu)

Monday lab: Ryan Telemko (rtelemko@ufl.edu)

Tuesday lab: Zachary Sumislaski (zsumislaski@ufl.edu)

Wednesday lab: Othman Alanquri (othman.k@ufl.edu)

Thursday lab: David Orense (daviorense@ufl.edu)

- 7. Meeting Times:** (Lectures) M, W, & F 9:35 – 10:25 AM
(Labs) M, T, W, & Th 3:00 – 6:00 PM
- 8. Class/laboratory schedule:** Three 50-minute lectures and one 3-hour lab per week
- 9. Meeting Locations:** (Lectures) 0260 FLG (Labs) 100 Weil

10. Material and Supply Fees: \$25

11. 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)

12. Recommended Reading:

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

14. Course Outline:

<u>Date</u>	<u>Lecture Topic</u>
Aug 21	Introduction
Aug 23	Aggregates
Aug 26	Aggregates (continued)
Aug 28	Aggregates (continued)
Aug 30	Portland Cement
Sep 2	LABOR DAY HOLIDAY
Sep 4	Portland cement (continued)
Sep 6	Fresh concrete
Sep 9	Hardened Concrete
Sep 11	Batching, Mixing & Transporting of Concrete
Sep 13	Placing, Finishing & Curing Concrete
Sep 16	Concreting under Special Conditions
Sep 18	TEST NO. 1
Sep 20	Concrete Mix Design (Assig. #1)
Sep 23	Concrete Mix Design (Continued)
Sep 25	Air-Entrained Concrete
Sep 27	Admixtures for Concrete
Sep 30	Special Concretes
Oct 2	Special Concretes (Continued)
Oct 4	HOMECOMING – NO CLASS

Oct 7	Video on Fresh Concrete Testing
Oct 9	Wood
Oct 11	Wood (continued)
Oct 14	Stress-Strain Diagram
Oct 16	Fatigue Behavior
Oct 18	TEST NO. 2
Oct 21	Thermal Stress Analysis
Oct 23	Introduction to Metals
Oct 25	Carbon Steel and Steel Alloys
Oct 28	Non-Ferrous Metals & Corrosion of Metals
Oct 30	Plastics
Nov 1	Introduction to Asphalts
Nov 4	Tests on Asphalts
Nov 6	Tests on Asphalts (Continued)
Nov 8	TEST NO. 3
Nov 11	VETERANS DAY – NO CLASS
Nov 13	Conventional Asphalt Specifications
Nov 15	Liquid Asphalts
Nov 18	Asphalt Mixing Plant
Nov 20	Superpave Asphalt Tests
Nov 22	Superpave Asphalt Specification
Nov 25	Superpave Asphalt Mix Design
Nov 27	THANKSGIVING – NO CLASS
Nov 29	THANKSGIVING – NO CLASS
Dec 2	Superpave Asphalt Mix Design
Dec 4	TEST NO. 4

15. Attendance and Expectations:

Attendance in lab is required. If you do not attend a lab (with no valid excuse), you will receive no credit for the report for that lab. If you have a valid excuse, you still need to make up the lab by attending another lab section.

Class attendance will be taken. Students with a perfect attendance record will be given 5 bonus points. One penalty point will be assessed for each unexcused absence. For example, those with 2 absences will have only 3 bonus points, those with 5 absences will have zero bonus point, and those with 9 absences will have 4 penalty points.

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 following the lab or as specified by the instructor. A penalty of 10% per school day shall be assessed on materials turned in late.

19. Honesty Policy:

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

20. Accommodation for Students with Disabilities:

Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

21. UF Counseling Services:

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- * UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
- * Career Resource Center, Reitz Union, 392-1601, career and job search services.

22. Software Use:

All faculty, staff and student 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. Course Evaluation:

“Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.”