

Course Syllabus

CGN 3501C Civil Engineering Materials

Spring 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 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) 2947768
 - 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 <http://elearning.ufl.edu/>
- 7. 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)
- 8. Meeting Times:** (Lectures) M, W, & F 9:35 – 10:25 AM
(Labs) M, T, W, & Th 3:00 – 6:00 PM
- 9. Class/laboratory schedule:** Three 50-minute lectures and one 3-hour lab per week
- 10. Meeting Locations:** (Lectures) 0211 MAEB (Labs) 100 Weil

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, 15th Edition
- d. ISBN number: 0-89312-272-6

14. Course Outline:

<u>Date</u>	<u>Lecture Topic</u>
Jan 6	Introduction
Jan 8	Aggregates
Jan 10	Aggregates (continued)
Jan 13	Videos on Aggregate Testing
Jan 15	Aggregates (continued)
Jan 17	Portland cement
Jan 20	MARTIN LUTHER KING JR DAY HOLIDAY
Jan 22	Portland cement
Jan 24	Fresh concrete
Jan 27	Hardened concrete
Jan 29	Batching, Mixing & Transporting of Concrete
Jan 31	Placing, Finishing, Curing Concrete, & Concreting under Special Conditions
Feb 3	Video on Fresh Concrete Testing
Feb 5	Video on Testing of Hardened Concrete
Feb 7	TEST NO. 1
Feb 10	Concrete Mix Design (Assig. #1)
Feb 12	Concrete Mix Design ()
Feb 14	Air-Entrained Concrete
Feb 17	Admixtures for Concrete
Feb 19	Special Concretes
Feb 21	Wood

Feb 24 Wood (continued)
Feb 26 TEST NO. 2
Feb 28 Stress-Strain Diagram

Mar 2 – Mar 6 SPRING BREAK – NO CLASS

Mar 9 Fatigue Behavior
Mar 11 Thermal Stress Analysis
Mar 13 Introduction to Metals

Mar 16 Carbon Steel and Steel Alloys
Mar 18 Non-Ferrous Metals & Corrosion of Metals
Mar 20 Plastics

Mar 23 Plastics (Continued)
Mar 25 Introduction to Asphalts
Mar 27 Tests on Asphalts

Mar 30 Tests on Asphalts (Continued)
Apr 1 TEST NO. 3
Apr 3 Conventional Asphalt Specifications

Apr 6 Liquid Asphalts
Apr 8 Asphalt Paving
Apr 10 Asphalt Mixing Plant

Apr 13 Superpave Asphalt Tests
Apr 15 Superpave Asphalt Specification
Apr 17 Superpave Asphalt Mix Design

Apr 20 Review for test
Apr 22 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.