Fall 2019

CE 641-101: Engineering Properties of Soil

Jay Meegoda

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Course Outline

CE 641 - Engineering Properties of Soils
Section: 101


Instructor: Dr. Jay N. Meegoda, Ph.D, PE, 221 Colton Hall, 973-596-2464, Fax: 973-596-5790,
Email: meegoda@njit.edu, homepage: [http://web.njit.edu/~meegoda](http://web.njit.edu/~meegoda), Office Hours: W: 4:00 to 6:00 PM and any other time when I am in my office.

Honor Code: The NJIT honor code will be upheld. Violations will be brought immediately to the attention of Dean of Students.

Prerequisite: approved undergraduate course in soil mechanics within last five years. An in-depth study of physical and mechanical properties of soils. Topics include clay mineralogy, shear behavior and compressibility of fine and coarse grained soil; and in-situ measuring techniques such as vane shear, core penetration and pressure meter. Laboratory work includes consolidation test and triaxial test, with emphasis on analysis, interpretation and application of data to design problems.

“Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:


Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

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<th>Week</th>
<th>Topic</th>
<th>Mitchell and Soga Book Chapter</th>
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<td>1</td>
<td>Soil Formation and Soil Mineralogy</td>
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<td>2</td>
<td>Soil Composition and Soil Fabric</td>
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<td>3</td>
<td>Granular Interactions</td>
<td>7 and 8</td>
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<td>Soil-Water-Chemical Interactions</td>
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<td>Soil Compaction and Field Applications</td>
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<td>Midterm Examination</td>
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<td>Conduction Phenomenon and Field Applications</td>
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<td>11-12</td>
<td>Volume Change Behavior and Field Applications</td>
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<td>Shear Strength/Deformation and Field Applications</td>
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<td>Final Exam</td>
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Course Objective
By the end of the semester the following learning objectives will be accomplished: Select appropriate laboratory and field methods for determining mechanical properties of coarse grained and fine grained soils interacting with the environment. Estimation or measurement of such based on laboratory and field tests and use of such in geotechnical designs.

Policy
- I will be communicating with you via email, so please make sure that you have NJIT email account.
- Based on participants some changes may be made to the syllabus; this will be discussed and agreed upon in class. You will be responsible for such changes.

Grading
- Please, carefully review the notes and example problems in your text book.
- You are encouraged to ask questions about homework problems in class, and discuss with classmates outside of class, post to a FORUM or email for class mates to comment and my response, but homework problems should not be done together.
- Home work is due at the beginning of the class following the completion of the topic. Late homework carries 50% penalty.
- Grading: Homework = 25%, Term Paper = 25%, Mid-term = 25%, Final = 25%

A list of Useful References


