New York University Tandon School of Engineering  
Civil & Urban Engineering Department  
Spring 2017 - CE-UY 4503 Construction Engineering  
Professor John Kuprenas  
Tuesday and Thursday 8:00AM to 9:20AM; JABS 200

To contact professor:  ilk17@nyu.edu or john.kuprenas@stvinc.com (use 4503 in the subject line);  
Cell 213-923-2515  
Office hours: Tuesday 7:00AM to 8:00AM, or by appointment

Course Pre-requisites  
CE-UY 1502 or CE-UY 1002, and junior standing or permission of the Construction Management Program  
Advisor

Course Description  
This course covers engineering fundamentals and developing trends in the use of excavating and earth  
moving equipment, trucks, pumps, drilling and blasting equipment and cranes. Also considered are  
shoring and bracing and other temporary site construction operations.

Course Objectives  
1. Introduce students to construction engineering  
2. Introduce and familiarize students with construction machinery  
3. Teach students concept related to construction planning and productivity  
4. Familiarize students with the engineering aspects of construction

Course Structure  
Lectures with in-class problems; homework; term project; midterm and final exam

Readings  
Primary Textbook  
Construction Planning, Equipment, and Methods / Edition 8 by Robert Peurifoy, Clifford J.  
Schexnayder, Robert Schmitt, Aviad Shapira  

Additional Resources  
American Society of Civil Engineers (ASCE), Journal of Construction Engineering and Management  
Caterpillar Performance Handbook (available online)  
Harris, F. C., Modern Construction Equipment and Methods, Longman Scientific & Technical  
Harris, F. C., Construction Plant Excavating and Material Handling, Equipment and Methods  
Nunnally, S. W., Construction Methods and Management, Third Edition, Prentice Hall  
Hill

Course requirements  
- Examination dates are shown on the attached agenda. The final examination will be comprehensive.  
- There is a strong correlation between good grades and class attendance/participation so students are  
strongly encouraged to attend the class and participate.
• Read the material covered in the lecture and attempt to solve some problems prior to the lecture to improve class participation and maximize learning.

• Grading:
  1. Homeworks (8) 25%
  2. Midterm 15%
  3. Project 25%
  4. Final 35%

Moses Center Statement of Disability
If you are a student with a disability who is requesting accommodations, please contact New York University’s Moses Center for Students with Disabilities (CSD) at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor.

NYU School of Engineering Policies and Procedures on Academic Misconduct
A. Introduction: The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School’s rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School’s Policy on Academic Misconduct.

B. Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:
   1. Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person’s work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
   2. Fabrication: including but not limited to, falsifying experimental data and/or citations.
   3. Plagiarism: intentionally or knowingly representing the words or ideas of another as one’s own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
   4. Unauthorized collaboration: working together on work that was meant to be done individually.
   5. Duplicating work: presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.
   6. Forgery: altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.
<table>
<thead>
<tr>
<th>#</th>
<th>Date</th>
<th>Topics</th>
<th>Reading</th>
<th>In-class</th>
<th>Homework</th>
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<tbody>
<tr>
<td>1</td>
<td>24-Jan 26-Jan</td>
<td>Introduction / Review of Engineering Economics</td>
<td>none</td>
<td>Introductions</td>
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<td>2</td>
<td>31-Jan 2-Feb</td>
<td>Ownership and Operating Costs</td>
<td>Chapter 2</td>
<td>Take off exercise</td>
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<td>3</td>
<td>7-Feb 9-Feb</td>
<td>Earthwork</td>
<td>Chapter 3</td>
<td>How many passes?</td>
<td>HW#1 due 2/7</td>
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<td>Soil and Rock</td>
<td>Chapter 4</td>
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<td>HW#2 due 2/14</td>
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<td>21-Feb 23-Feb</td>
<td>Compactions</td>
<td>Chapter 5</td>
<td>Hill Climb</td>
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<td>6</td>
<td>28-Feb 2-Mar</td>
<td>Equipment Power</td>
<td>Chapter 6</td>
<td>Production factors</td>
<td>HW#3 due 3/2</td>
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<td>7-Mar 9-Mar</td>
<td>Dozers</td>
<td>Chapter 7</td>
<td>Cycle</td>
<td>HW#4 due 3/9</td>
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<td>14-Mar 16-Mar</td>
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<td>21-Mar 23-Mar</td>
<td>Scrapers</td>
<td>Chapter 8</td>
<td>Cycle II</td>
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<td>28-Mar 30-Mar</td>
<td>review session + Midterm Exam</td>
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<td>11</td>
<td>4-Apr 6-Apr</td>
<td>Excavators</td>
<td>Chapter 9</td>
<td>Cycle III (Wow!)</td>
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<td>12-Apr 13-Apr</td>
<td>Trucks</td>
<td>Chapter 10</td>
<td>Reach</td>
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<td>18-Apr 20-Apr</td>
<td>Finishing</td>
<td>Chapter 11</td>
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<td>25-Apr 27-Apr</td>
<td>Cranes</td>
<td>Chapter 17</td>
<td>Curves</td>
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<td>Piles</td>
<td>Chapter 18</td>
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<td>Term Project Due 5/4</td>
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<td>11-May</td>
<td>Final Exam</td>
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<td>Study!</td>
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