New York University Tandon School of Engineering

Civil and Urban Engineering

Brooklyn Campus

SYLLABUS
CE-GY 8263-I (15980) – CONSTRUCTION COST ESTIMATING

SPRING 2018

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(845) 249-0449 (Cell)
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Class Times: Tuesday – 12:25pm to 2:55pm

Class Location: Jacobs Administrative Building, Room 777

Catalog Description: Estimates and costs from the viewpoint of contractor or construction engineers; details of estimating with emphasis on labor, materials, equipment, and overhead costs.

Prerequisites: None

Course Objectives: The purpose of the course is to introduce students to the process and procedures of cost estimating for construction projects, and the utilization of the cost estimates in Construction Management. Specifically, it will prepare students to be able to perform the following:

1. Describe the processes of preparing conceptual, preliminary and detailed estimates.
2. Perform quantity takeoffs and allocate units of work.
3. Organize the collection of estimate data.
4. Identify sources of cost data.
5. Be familiar with the key components of labor, equipment and material costs.
6. Determine crew size and productivity.
7. Identify site conditions and factors which affect cost estimates.
8. Allocate direct and indirect project costs.
9. Identify and allocate contingency and escalation.
10. Prepare a project estimate, including all direct and indirect costs, overhead and profit.
11. Be familiar with contract documentation.
12. Discuss bid estimate strategy.
13. Validate the cost estimate.
14. Develop schedules from the cost estimate data.

Required Textbook:
John Chiang, PE and Phillip R. Waier, PE, CSI
R.S. Means Company.

Recommended (not required)
Understanding Construction Drawings, 3rd Edition
Mark W. Huth and Walter Wells
Published by Delmar/Thompson Learning
ISBN: 0-7668-1580-3
(It is not necessary to purchase the drawings offered with this book, as the pertinent
drawings will be provided.)

Recommended (not required)
Building Construction Illustrated, 4th Edition
Francis D.K. Ching.
Published by John Wiley and Sons, Inc., New York
ISBN: 978-0-470-08781-7

Class Attendance: Attendance is required at all classes, except when excused by the
instructor. Each student is responsible for the material covered in class. If you miss a
class, you are responsible for obtaining the notes from fellow students.

Grading: Grades will be based upon exams, homework assignments, projects, class
participation and attendance. There will be one mid-term exam and a final exam. In
addition, there will be a written report on a selected construction project. Grading will be
as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-term Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Report</td>
<td>35%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>35%</td>
</tr>
<tr>
<td>Attendance and Class Participation</td>
<td>10%</td>
</tr>
</tbody>
</table>

Final Grades will be assigned as follows:
A = 93 - 100
A - = 90 – 92
B + = 87 - 89
B  = 83 - 86
B - = 80 - 82
C + = 77 - 79
C  = 70 - 76
Planned Class Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 23</td>
<td>Introduction</td>
</tr>
<tr>
<td>Jan. 30</td>
<td>Scope of Work. Estimate Types</td>
</tr>
<tr>
<td>Feb. 6</td>
<td>Drawings. Measurements. Quantity Takeoff.</td>
</tr>
<tr>
<td>Feb. 20</td>
<td>Labor, Equipment and Material. Crew Size. Productivity</td>
</tr>
<tr>
<td>Feb. 27</td>
<td>Site Conditions. Factors. Productivity Index</td>
</tr>
<tr>
<td>Mar. 6</td>
<td>Indirect Costs. Overheads. Cost Indexes</td>
</tr>
<tr>
<td>Mar. 13</td>
<td>Spring Recess</td>
</tr>
<tr>
<td>Mar. 20</td>
<td>Review. <strong>Mid-term Exam</strong></td>
</tr>
<tr>
<td>Mar. 27</td>
<td>Contract Documentation.</td>
</tr>
<tr>
<td>Apr. 3</td>
<td>Bidding. Bidding Strategies.</td>
</tr>
<tr>
<td>Apr. 10</td>
<td>Estimates and Schedules.</td>
</tr>
<tr>
<td>Apr. 17</td>
<td>Total Cost.</td>
</tr>
<tr>
<td>Apr. 24</td>
<td>Estimate Validation.</td>
</tr>
<tr>
<td>May 1</td>
<td>Contingency Analysis. (<strong>Final Report due.</strong>)</td>
</tr>
<tr>
<td>May 8</td>
<td>Reading Day (No Class)</td>
</tr>
<tr>
<td>May 15</td>
<td><strong>Final Exam.</strong></td>
</tr>
</tbody>
</table>

**Emergencies:** If you will be unable to attend class, turn in an assignment or take an exam on the date scheduled due to illness or an emergency, you must contact the instructor prior to the date in question, if possible, or within 24 hours thereafter.

**Changes to the Syllabus:** The instructor reserves the right to modify any or all parts of the syllabus. Changes will be announced in class.

**Moses Center Statement of Disability**

If you are 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 mosecsd@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.