New York University Tandon School of Engineering
Brooklyn Campus

SYLLABUS
CE-GY 8263-I (2185) – CONSTRUCTION COST ESTIMATING
Spring 2017

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CLASS TIMES: Saturday @ 9.30 AM to 12.00 PM

CLASS LOCATION: Brooklyn Campus; Room-TBD

PREREQUISITES: Graduate Standing
The prerequisite course(s) for the class is as per NYU Polytechnic School of Civil and Urban Engineering Departmental Bulletin or have been completed with a B or better grade, include MINIMUM COMPLETION OF 24 CREDITS OF BASIC and/or ENGINEERING MATHAMATICS AND/OR COMPLETION OF 8 SEMESTER FROM AN ACCREDITED CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENTS. Special considerations are limited to students whose outstanding performance are recognized by the department and approved by the Instructor.

COURSE OBJECTIVES:
This course is designed to give the students a thorough understanding to practice estimate from the viewpoint of contractor and engineers; detailing with labor, materials, equipment, overhead and profit money in diverse building, civil, and critical infrastructure projects. Upon completion of this course, students will be prepared to work as an entry level estimator at any construction or engineering firm and be able to perform:-

1. Can interpret contract documentations (drawings, specification, NOD)
2. Can process estimating data, and identify the sources of cost engineering analysis
3. Can perform quantity takeoffs and allocate units of work breakdown structures
4. Be familiar to determine crew size and productivity
5. Can analyze all key components of labor, equipment, material costs including identification of cost impact unforeseen factors
6. Can perform detail estimate for all trades including all direct/indirect costs, overhead, profit and allocation of contingency & escalation.
7. Can prepare conceptual estimate from early phase of design development to complete design packages and construction documents.
8. Be familiar with estimating pchychology, bidding strategy, and validation of the project
ACADEMIC HONESTY & GRADING SYSTEM:
All students are subject to the policies described in the university Catalogue. In particular, students to be familiar with policies described on university catalogue. Giving aid to a student during an exam or taking information from another student or student’s exam constitutes academic dishonesty. Students caught cheating during an exam will receive a failing grade in the course. Students are encouraged to work together to solve homework problems, but **Copying is prohibited**. Grades will be assigned based on the student’s performance as measured by the assigned homework, midterm exams, and final exam. Grading will be in accordance with the University’s grading policy as outlined in the section entitled “Grading system” in the current copy of the University catalog. There will be one mid-term exam and a final exam. In addition, there will be written report on a selected construction project. Grading will be as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment/Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Mid-term Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>35%</td>
</tr>
<tr>
<td>Attendance and Class Participation</td>
<td>25%</td>
</tr>
</tbody>
</table>

Final Grades will be assigned as follows:
- A   = 95 - 100
- A - = 90 – 92
- B + = 87 - 89
- B   = 83 - 86
- B - = 80 - 82
- C + = 77 - 79
- C   = 70 - 76
- F   = less than 70%

*Students achieving overall percentages as shown are guaranteed grades as indicated. Actual cutoffs may be lower.

COURSE ORGANIZATION & EVALUATION:

**Lecture Sessions**
Lecture sessions will be two and half hours in length, and held once a week. Classes will be devoted to the presentation of lecture topics, a brief review of the assignments, administering exams, and addressing individual questions as time allows. To maximize learning, students are encouraged to participate actively in lecture. All students will also have the opportunity to work in small room groups to solve problems in/out of the classroom.

**Course Web Page or E-mail**
A CE 8263-I (2185) CONSTRUCTION COST ESTIMATING course web page or e-mail may be developed though the university web page if available. It is important all students may have a web e-mail account to utilize the tools of this course web page. Students are expected to check their web email and the course web page regularly (if developed) for important class announcements, homework assignments & solutions, and other information. Student should send all email to me during the semester with “CE 8263-I (2185) CONSTRUCTION COST
**ESTIMATING** somewhere in the “subject line”  Email without this designation subject line may not be recognized or responded.

**Classroom Interruptions**
All cellular phones and pagers to be turned off prior to entering lecture sessions and exams. Students may not bring food, drinks (except water) during lecture session. Use of classroom computers during the lecture will be allowed if related to the class.

**Homework Policy**
Homework problem will be assigned regularly. Assignments to be turned in at the beginning of class on the due date, and **late submission are not acceptable**. No homework may be submitted after an assignment is returned or after solutions are provided. Homework to be neat and organized, and completed by using a straight edge and standard 8x11 size paper (front side only). Special notes shall be boxed or underlined for clarity and engineering units shall be used in solving problems. Homework sheets shall be stapled, with name at the top of each page. **Electronic submission are not acceptable**. Homework will be reviewed for completion of all assigned problems, and all of the assigned problems will necessarily be graded. No homework assignments and final exams sheets shall be returned to the students except mid-term exams sheets.

**Exams Policy**
One two hours midterm exams will be given as noted on the exam schedule below. There midterm exams sheets will be returned to the students for review in class, but will be collected and remained on file in the instructor’s office for a maximum period of one year. Any appeal on the scoring of an exam must be made at the first lecture period following return of the midterm exam. A two and half hours final exam will be given as determined by the University Final Exam Schedule (noted on the exam schedule below). Final exams sheets will not be returned, but will remain on file in the instructor’s office for a minimum period of one year. During this time, the student may schedule an appointment with the instructor to review his/her final exam report.

Students can bring the Calculator, Sage/Timberline, Primavera, HCSS software and AISC steel manual along with 8.5x11sheet to the exams room and an additional sheet for each subsequent exam. There sheet shall be your own hand written notes. The instructor will collect and review their sheets. Makeup exams will be given only if prior permission is granted for extreme situations such as valid medical reasons.

**Instructor**
Dr. Faruque Hossain has over fifteen years experiences in Construction and Engineering management for both public and private sectors specialized in building, civil, and critical infrastructure projects. He worked and/or consulted in diverse small companies to fortune listed companies and managed as less as million dollars to over billion dollars projects. Faruque also worked for the New York City as the Director of Technical Services. He got PhD from Hokkaido University, did his Post Graduate research in Engineering at University of Sydney, and Executive Education in Architecture at Harvard University. He is LEED certified professional and Editor of several International Journal of Construction and Engineering related field.
## CE 8263-I (2185) CONSTRUCTION COST ESTIMATING – LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Topic</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>1</td>
<td>Introduction, Types of Estimate, Measurements, Crews, Equipment, Material, and Productivity</td>
<td>Chapter 3-Construction Depth Reference Manual for Civil PE Exam and Class Lecture</td>
</tr>
<tr>
<td>2nd</td>
<td>2</td>
<td>Details Estimate-Division 2-Civil (Site, Excavation)</td>
<td>Chapter 1-Construction Depth Reference Manual for Civil PE Exam and Class Lecture</td>
</tr>
<tr>
<td>3rd</td>
<td>3</td>
<td>Details Estimate-Division 3-Concrete (Foundation, Superstructure)</td>
<td>Chapter 6-Construction Depth Reference Manual for Civil PE Exam and Class Lecture</td>
</tr>
<tr>
<td>4th</td>
<td>4</td>
<td>Details Estimate-Division 4, 5-Masonry and Steel</td>
<td>Chapter 2-Construction Depth Reference Manual for Civil PE Exam and Class Lecture</td>
</tr>
<tr>
<td>5th</td>
<td>5</td>
<td>Details Estimate-Division- 6,7,8,and 9</td>
<td>Chapter 4-Construction Depth Reference Manual for Civil PE Exam and Class Lecture</td>
</tr>
<tr>
<td>6th</td>
<td>6</td>
<td>Detail Estimate-Division 10,11, 12, 13, and 14</td>
<td>Chapter 5-Construction Depth Reference Manual for Civil PE Exam and Class Lecture</td>
</tr>
<tr>
<td>7th</td>
<td>7</td>
<td>MID TERM</td>
<td>Class Lecture 1 thru 6</td>
</tr>
<tr>
<td>8th</td>
<td>8</td>
<td>Detail Estimate-Division 15- Plumbing, Sprinkler, HVAC</td>
<td>Class Lecture and Note</td>
</tr>
<tr>
<td>9th</td>
<td>9</td>
<td>Detail Estimate-Division 16- Electrical</td>
<td>Class Lecture and Note</td>
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<tr>
<td>10th</td>
<td>10</td>
<td>Special Topics-Bridge/Tunnel/Highway Construction Estimate</td>
<td>Class Lecture and Note</td>
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<tr>
<td>13th</td>
<td>12</td>
<td>Cost Engineering for Sustainable Design and Construction</td>
<td>Class Lecture and Note</td>
</tr>
<tr>
<td>14th</td>
<td>13</td>
<td>Contract Documents, Risk Management, Direct &amp; Indirect Cost, General Condition, and Bidding Strategies</td>
<td>Class Lecture and Note</td>
</tr>
<tr>
<td>15th</td>
<td>14</td>
<td>FINAL EXAM</td>
<td>Class Lecture 1 thru 13</td>
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**TEXTBOOKS:**

**SOFTWARE:**
Sage/Timberline, HCSS (Heavy Bid), On Screen Take Off, Construction Link, and Primavera

**REFERENCES:**

**DISCLAIMER:**
The instructor may reserves the right to adjust and/or modify the scope of the course, lecture schedules, including number and timing of exams if necessary.