CONSTRUCTION MANAGEMENT AND TECHNOLOGY

Semester Year: Summer 2017

Course Number: PLAN6357

Number Credits: 3

Thursday: 6:15 -8:15,
Rm: 113 Avery
June 1 – August 10, 2017

Instructor: Bob Sanna
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Class Assistant: Samantha "Sam" Richens
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I. COURSE DESCRIPTION

This course is an introduction to construction solutions and process, focusing on appropriate applications for diverse project requirements. We will explore construction documentation, project delivery mechanisms, basic building systems as well as key project management process. The course goal is to provide technical, legal and administrative concepts that enable the developer to navigate the numerous value-related decisions in the development process.

II. COURSE REQUIREMENTS AND ASSIGNMENTS

Note, due to the high amount of content that needs to be covered in the course, students are expected to arrive to class on time and having completed the assigned readings listed below. Each week students will be called on to discuss key points covered in the readings. Class discussion will focus on practical understanding of the concepts and avoid redundant review of fundamentals already covered in the readings.

III. COURSE GRADING CRITERIA

20% - Attendance & Participation
20% - Assignments (2) 10% each
30% - Midterm
30% - Final

COURSE GRADE:

HP, High Pass (95 - 100)
P, Pass (80 - 94)
LP, Low Pass (60 - 79)
F, Fail (59)

Only exceptional performers will receive a High Pass. Those who fall short on more than one major assignment will receive a Low Pass.

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IV. READINGS

I strongly encourage you to complete readings ahead of the class. This will familiarize you with what we discuss in the class and put you in a better position to participate in class discussions. For each session, I have indicated the chapter from the textbook that will be covered in the class. With the exception of those from the required textbook, these will be posted at least one week in advance on Canvas. Link is Courseworks2.columbia.edu

REQUIRED READING/REFERENCE LIST:

- Construction Management Fundamentals by: Kraig Knutson, Clifford J. Schexnayder, Christine Fiori, Richard Mayo
- Building Construction Illustrated 5th Edition by: Francis D.K. Ching

INTERESTING/FUN READ:

- Good Guys, Wiseguys, and Putting Up Buildings (a life in construction) by: Samuel Florman

V. COURSE OUTLINE

1. **June 1st - Introduction to Construction Management**
   - Design Process Review. Project Team & Project Delivery Mechanisms
     - Reading: Construction Management Fundamentals - Chapters 2, pgs. 39 – 55 & Chapter 3, pgs. 58 -75

2. **June 8 - Construction Admin I**
   - Contract Docs, Contract Relationships, Bid/Award Type Of Contracts
     - Reading: Construction Management Fundamentals - Chapter 8, pgs. 272 - 292

3. **June 15 - Construction Admin II**
   - Administration of Construction Contract, Preconstruction thru Requisition, Finance, Draw Process, Change Orders and Claims
     - Reading: Construction Management Fundamentals - Chapter 3, pgs. 75 -91 & Chapter 8, pgs. 301- 312
     - **1st Assignment** - prepare a request for proposal (RFP) for the selection of an architect and construction manager utilizing concepts from construction admin. **Assignment due June 21st, at 5:00pm**

4. **June 22 - Construction Admin III (guest speaker: John L. Hunt - Sr. VP, Director of Construction Legal Services and Risk Management, FCRC)**
   - Bonds, Insurance & Liens
     - Reading: Construction Management Fundamentals - Chapters 8, pgs. 293 – 301

5. **June 29 - Building Systems I**
   - Foundations and Superstructure
     - Reading: Building Construction Illustrated - Chapters 3 & 4
     - Construction Management Fundamentals - Chapter 13

- **Optional**: Reinforced Concrete Design (Canvas)

6. **July 6 - (guest speaker: Shawn Amsler – Amsler Advisors LLC)**
   - **Midterm Exam, Closed-Book/Note**. Intro to Construction Management, Const Admin I ,II & III (classes 1 – 4)
   - Introduction to Estimating Concepts (1.hr)
     - Introduction to Estimating (posted to Canvas)

7. **July 13 - Building Systems II**
   - Exterior Wall, Fireproofing and Elevators
     - Reading: Building Construction Illustrated – Chapter 8 & Chapter 9, pgs. 9.14 -9.17
     - Construction Management Fundamentals - Chapter 14

8. **July 20 - Building Systems III**
   - Mechanical, Plumbing, Fire Protection Systems and Commissioning
     - Reading: Building Construction Illustrated Chapter 11 pgs. 11.02 – 11.29
     - **2nd Assignment: Details to follow. Assignment due July 26th, at 5:00pm**

9. **July 27 - Building Systems III Continued (guest speaker: Tom Bonacuso - Sr. VP, Construction, FCRC)**
   - Electrical, Infrastructure and Public Utilities
     - Reading: Building Construction Illustrated Chapter 11 pgs.11.30 -11.44

10. **August 3 – Scheduling, Permit Process & Labor Unions**
    - Concepts of Project Schedule
      - Critical Path method
    - Discussion of Regulatory Approvals
      - Reading: Construction Management Fundamentals - Chapter 4 pgs. 94 -122

11. **August 10 –** Building Information Modeling (BIM) Demonstration
    - **Final Exam Closed-Book/Note – On Entire Semester**

VI. FINAL EXAMS AND PROJECTS

- Assignments: There will be two (2) assignments.
- Exams: There are two exams – Midterm and Final in this course. All exams are closed-notes and closed-book. Please mark your calendars for the dates of the exams.
- Lecture Material: Lecture notes and all other course related materials will be posted on Canvas. You should download them and bring a print to the class.
- The use of personal laptops, tablets, smart phones, etc. are not allowed in class. Students violating the policy will be asked to leave the classroom and will be marked absent for the day.