

# Course Syllabus – CNST 3331

## Construction Planning and Scheduling

### **Course Description:**

This course is designed to equip students with a thorough and working knowledge of planning and scheduling expectations by employers in the engineering / construction industry. Specifically, the course addresses the development and use of bar charts, CPM network diagrams, CPM calculations, and other selected topics such as resource leveling, network crashing, earned value management, ethics, and schedule risk. The course also focuses on creating a viable schedule while applying the industry standard software, Primavera P6, for project planning and scheduling.

### **Course Prerequisites:**

CNST 2351 (Construction Estimating I) with a C or better in CNST 2351

### **Textbook:**

A textbook is not required. All course materials are posted in Blackboard, please use your CougarNet account to log in <https://accessuh.uh.edu> .

### **Course Learning Outcomes:**

Upon the completion of the course, students will demonstrate their ability to:

1. Create a Project Schedule, develop a Schedule Basis, Incorporate Schedule Resources, and create a Schedule Baseline.
2. Understand planning, scheduling, and control theory and principles
3. Use industry standard scheduling software Primavera, P6
4. Understand time, cost, and resource management principles

In addition to the learning objectives above, this course emphasizes **Safety, Ethics**, and **Oral/Written Communications**.

### **Additional References (Optional)**

- Hinze, Jimmie, *Construction Planning and Scheduling*, Pearson Prentice Hall.
- Mubarak, S., *Construction Project Scheduling and Control*, Pearson Education, Inc.
- Ahuja, H., Dozzi S., and AbouRizk, S., *Project Management: Techniques in Planning and Controlling Construction Projects*, 2nd Edition, John Wiley and Sons.

### **Student Learning Outcomes:**

5. Create Construction Project Schedules
10. Apply Electronic-Based Technology to Manage the Construction Process
13. Understand Construction Risk Management
14. Understand Construction Accounting and Cost Control
16. Understand Construction Project Control Processes

### **Course and Student Learning Outcome Mapping:**

Student Learning Outcome	Course Learning Outcomes
5	1
10	3
13	2
14	4
16	4

### **Student Learning Assessment and Assessment Target:**

Assessment	SLO#5	SLO#10	SLO#13	SLO#14	SLO#16	Assessment Target

Support (S)			X	X		At least 70% of students receive a grade of 70 or better
Assess (A)	X	X	X		X	At least 70% of students receive a grade of 70 or better

**Class Grading:**

Participation / Attendance	10%
Quizzes	28%
Final Project	32%
Final Exam	30%

**Note: The Final Exam will be administered on the last official day of class (Wednesday, 25-November-2020).**

**Grading Scale:**

Letter Grade	Score
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	< 60%

Note: During the semester, students are responsible for verification of correct score for their assignments, and quizzes. No corrections/modifications will take place after the last day of class.

## Class Schedule:

CNST 3331 - 1 Section 16514 Construction Planning & Scheduling		
Weekly Calendar - Schedule of Topics		
WEDNESDAY 4:00 PM to 7:00 PM		
Week	August	
1	26	Welcome to CNST3331 & Course Outline Week 1 Lecture - Planning Scheduling & Bar Charts My Education Project
September		
2	2	Quiz # 1 - Concepts & Bar Charts Week 2 Lecture - Supt Techniques Used During the Pln Process Week 2 - Introduction to the Final Project
3	9	Quiz 2 - Planning Supporting Techniques (WBS) Week 3 Lecture - Planning Scheduling Networks (I) AON Activity-on-Node Week 3 AON Exercises Week 3 Final Project Development
4	16	Week 4 Lecture: Introduction to P6 - 1 (Create Node, Create Project, Create WBS, Create Cal, Add Activities) Week 4 Final Project Development
5	23	Week 5 Lecture: CPM - Forward Pass & Backward Pass & Float Concepts CPM Forward & Backward Pass Exercises Week 5 Final Project Development
6	30	2 Quizzes (3 & 4) - CPM Calculation & CPM Concepts Week 6A - Lecture: Part A: P6(II) CPM & Reporting Week 6B - Lecture: Part B: P6(III) Calendar, WBS, & Activity Codes Week 6 Final Project Development
October		
7	7	Week 7 Lecture: Resource Allocation & Leveling Week 7 Resource Leveling Exercise Week 7 Final Project Development
8	14	Week 8 Lecture: P6 Resource Management Exercise Week 8 Final Project Development
10	21	Week 10 Lecture: Schedule Compression Week 10 Lecture: Project Control in P6 (Baseline Concepts) Week 10 Final Project Development
11	28	Quiz # 5 - Schedule Compression Week 11 Lecture: Process Control & Earned Value Analysis Week 11 Final Project Development
November		
12	4	Quiz # 6 Project Control & Earned Value Week 12A Lecture: An Overview of Other Scheduling Techniques Week 12B Lecture: Project Control Processes Week 12 Final Project Development
13	11	Week 13 Lecture: Ethical Principles Week 13 Lecture: Schedule Risk <b>Final Project Complete @ 7:00 PM</b>
14	18	Quiz # 7 - Schedule Risk Week 14 Lecture: AIC Review Week 14 Lecture: Final Exam Review
15	25	<b>Final Exam November 25</b>

### **Classroom Behavior:**

A high level of professionalism in the classroom is expected. The *instructor* has the right to set the rules of his/her classroom. A student does not have the right to make changes to the instructor's way of managing the classroom. Disruptive behaviors, such as excessive talking, arriving late to class, and using unauthorized electronic devices during class is *not* permitted. Repetitive and seriously disruptive behavior may result in removal from class in accordance with policies and procedures set by the Dean of Students Office.

### **Academic Honesty:**

Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from The University. Since dishonesty harms the individual, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.

### **Exam Policy:**

Exams will include material covered in class discussions as well as assignments. The last day of class is the deadline for students to verify their grades and the accuracy of their score. After this deadline, there will be no consideration for any changes.

### **Assignment and Exam Policy:**

Our industry is built on utmost respect for agreements, deadlines, delivery on-time, and quality of product, ability to work under pressure, and time management. Time management is an essential skillset. **NO late assignments, quizzes, or exams will be accepted.** Quiz and exam make-up will NOT be given, with only exception in the rare event of a verified emergency. Please note that travel, conflicts with work-schedules, family events etc. are not considered in this course as emergency for missing exams and quizzes. Quizzes and exams will include material covered in class lectures, exercises, discussions, and homework. The last day of class is the deadline for students to verify their grades and the accuracy of their score. After this deadline, there will be no consideration for any changes.

### **University Counselling and Psychological Services:**

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (UH main campus [www.uh.edu/caps](http://www.uh.edu/caps), or UH Sugar Land campus <http://www.uh.edu/dsaes/uhsugarland/>) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the "Let's Talk" program, a drop-in consultation service at convenient locations and hours around campus.

UH Main Campus: [http://www.uh.edu/caps/outreach/lets\\_talk.html](http://www.uh.edu/caps/outreach/lets_talk.html)

UH Sugar Land Campus: <http://www.uh.edu/dsaes/uhsugarland/>

### **Course/Instructor Evaluation:**

A mid-term **Start-Stop-Continue** survey and a **final course/instructor evaluation** will be conducted during this semester. Any suggestions you have on improving the course, however, are welcome throughout the semester. For detailed information about Disabilities, Religious Holy Days, the Academic Calendar, and Academic Honesty, and other information, please visit the following website: [http://www.uh.edu/provost/stu/stu\\_syllabsuppl.html](http://www.uh.edu/provost/stu/stu_syllabsuppl.html)

### **Students with Disabilities:**

University of Houston provides, upon request, appropriate academic adjustments for qualified students with disabilities. Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Center for Students with Disabilities (713/743-5400) for more assistance.

For detailed information about Disabilities, Religious Holy Days, the Academic Calendar, and Academic Honesty, and other information, please visit the following website:  
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