



Course ID and Title: CE569 Project Controls

Units: 4

Spring 2025 Thursdays 6 pm to 9:40 pm

Location: OHE100B and Online DEN Class

Instructor: Devang Dedhia, PSP

Office: Virtual

Office Hours: 30mins before or after class on class days or by prior appointment

Contact Info: dedhia@usc.edu (Please allow 2-3 business days for a response)

Teaching Assistant: TBD

Office: TBD

Office Hours: TBD

Contact Info: TBD

IT Help:

Brightspace Help

<https://brightspace.usc.edu/>

Virtual Assistant: click the speech bubble in Brightspace and submit a case for quick resolution!

Technical Support Line: 888-895-2812

Email Support: usc@d2l.com

ITS Email Support: brightspace@usc.edu

ITS Support Desk Hotline: 213-740-5555

Viterbi IT Help: Viterbi IT Help

Hours of Service: Mon-Fri, 8 am – 5 pm

Contact Info:

- <https://viterbi.usc.edu/resources/vit/getting-assistance/>
- Call 213-740-0517
- Send email to engrhelp@usc.edu
- Walk-In support is available by visiting DRB 205

Course Description

In the dynamic realm of construction management, the pulse of success resonates with one key question: "What is the status of the project?" This course presents a gateway to mastering the art and science of project controls, a critical cornerstone for ensuring project success. The core objective of this course is to equip aspiring leaders and project participants with a profound understanding and practical application of project control principles. It serves to empowering individuals to confidently steer projects toward success by harnessing the power of structured project controls methodologies. Throughout this transformative educational journey, participants will delve into an intricate tapestry of project controls essentials along with practical application that underpin effective project delivery.

Moreover, students will embark on a voyage to master the art of crafting and fine-tuning project schedules, meticulously evaluating project status, and embracing the proactive stance needed to monitor project progress effectively. Furthermore, this course will help to cultivate the adaptive mindset required to navigate through variances and changes that often punctuate project trajectories. Beyond just education, this course is designed to inspire and empower. It cultivates a mindset geared towards leadership, innovation, and adaptability. Participants will emerge not only as proficient project controllers but as visionaries poised to lead projects.

Learning Objectives

- Understanding the anatomy of project costs and schedules
- Mastering cost engineering principles for optimized project outcomes
- Crafting, managing, and refining project schedules with precision
- Evaluating project status and adapting strategies for enhanced project control
- Navigating variances and proactively responding to changes within projects

After taking the course, the student will be

- Able to apply their knowledge of Project Controls on any project
- Able to develop a Project Controls approach to track costs and schedule on any project
- Learn about industry best practices for Project Controls
- Learn essential software (Oracle's Professional Project Management Software P6) skills for creation and maintenance of project schedules

While office hours are limited due to full-time work commitments, all efforts will be made to meet and resolve any questions or issues you may have.

Course Notes

Class discussions will emphasize the theory and understanding of the various concepts and methodologies related to Project Controls. While the course syllabus lists an outline of course material, class discussions and progress will guide coverage of the course material. Students will be introduced to Oracle's Professional Project Management Software for developing and tracking projects in the course.

Student participation is recommended in class. Students will read and research topics as part of this course. The course includes time for students to reflect and contemplate and involves interactive discussions with students and industry professionals.

Students can access all the course material, assignments, announcements, and discussions through Brightspace.

Technological Proficiency and Hardware/Software Required

Students must have a working knowledge of computer systems, along with Microsoft Word, Excel, PowerPoint, Brightspace, Webex, and Zoom.

Students will complete some assignments using Oracle's Primavera P6 Project Management software provided by USC or using a free version. Instructions for accessing Oracle's Primavera P6 Project Management software will be provided in the course. Students should note that Oracle's Primavera P6 software can be directly installed on WinOS and cannot be installed on MacOS. Students enrolled in the course can access the software using [Viterbi MyDesktop VDI](#) from WinOS and MacOS.

See information about the [USC Computing Center Laptop Loaner Program](#). Additional links for students [Zoom information for students](#), [Brightspace help for students](#), [Software available to USC Campus](#).

Required Readings and Supplementary Materials

The following books will be used in the course. In addition, students will receive extra reading material and supplementary materials during the course.

1. Construction Planning and Scheduling Second Edition, by Thomas E. Glavinich, D.E., P.E., The Associated General Contractors of America, 2004, ASIN: B001D06PIM, ISBN-13: 978-0010034158

2. Planning and Control Using Oracle Primavera P6 Versions 8 to 17 PPM Professional, Paul E Harris, Eastwood Harris, 2017, ISBN-10: 1925185508, ISBN-13: 978-1925185508

Optional Readings and Supplementary Materials

1. Applied Cost Engineering Third Edition, by Forrest Clark, A.B. Lorenzoni, ISBN-10: 9780824798000 ISBN-13: 978-0824798000 ASIN: 0824798007
2. AACE Professional Practice Guide PPG #12: Construction Project Controls, Second Edition, Edited by Dr. Douglas D. Gransberg, PE CCE FRICS and Eric Scheepbouwer, AACE International, 2010
3. CPM Scheduling for Construction: Best Practices and Guidelines, PMI, 2014 ISBN13: 978-1-62825-037-4

Description and Assessment of Assignments

Homework Assignments demonstrate the student’s understanding of the principle or procedure introduced in the class. Homework Assignments will be graded on demonstration of knowledge, precision, thoroughness, and visual presentation. Each Homework Assignment will have an equal weight in its category.

The Mid-Term Exam and Final Exam will consist of multiple-choice questions, written calculations, and questions with short answers.

For the Individual Paper, students will conduct an interview with an industry professional(s) and submit a well-written report on any of the following topics – project controls initiatives in the company, project controls goals and plans to achieve goals, project controls training, current project control practices. Instructor will provide details during the course.

Participation

Student participation will be considered as asking thoughtful questions, adding a perspective that was not shared previously, and completing in-class exercises (graded as Assignments).

Grading Breakdown

Assessment Tool (assignments)	% of Grade
Assignments	25
Individual Paper	15
Mid-Term Exam	30
Final Exam	30
TOTAL	100

Non-attendance can be the basis for lowering the grade.

Grading Scale

Course final grades will be determined using the following scale. The Instructor will communicate any changes to the grading scale if deemed necessary.

Letter grade	Corresponding numerical point range
A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

Assignment Submission Policy

Assignments will be posted on Brightspace with due dates. Students shall include their full name on each page of the assignments for both hard copies & electronic copies. When submitting electronic files, please include your student name in the filename(s). Students do not need to include your USC ID number unless specifically requested.

For each assignment, the latest attempt will be considered for grading. Students are responsible for submitting the complete file(s) in their latest attempt. Any assignment attempts submitted after it's original due date will be treated as a Late assignment. Late assignments will be accepted, and a penalty of 15% points per day will be deducted for a late submission. Late assignments will not be accepted after the last class or one week from the original due date, whichever is earlier.

Grading Timeline

Assignments will be graded and returned before the next week's class.

Attendance

Students are expected to attend class regularly and complete the in-class exercises as per the instructions. Non-attendance can be the basis for lowering the grade. Student-athletes with approved Travel Request Letters and students who give advance notice of religious observation or illness will be excused and not considered as absent. Students are expected to review the missed course material to stay on track and contact the Professor or Teaching Assistant or Course Producer if they have any questions about the missed course material.

Classroom norms

In this class, we will cultivate a respectful and collaborative learning environment. Questions, Active participation and open communication are encouraged, as they enhance the learning experience for everyone. Please arrive on time, come prepared, and engage fully during discussions and activities. Students can request the Instructor to repeat something if they don't understand the material or meet separately to clarify their understanding.

Netiquette

When participating online, please maintain a professional and respectful tone in all communications. Use clear and concise language, and avoid using slang or overly casual expressions. Keep your microphone muted when not speaking to minimize background noise, and use the "raise hand" feature or chat to contribute to discussions or ask questions. Be mindful of your surroundings and ensure your camera, if on, reflects a professional setting. Engage actively and respectfully, just as you would in a physical classroom.

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

Academic dishonesty has a far-reaching impact and is considered a serious offense against the university. Violations will result in a grade penalty, such as a failing grade on the assignment or in the course, and disciplinary action from the university itself, such as suspension or even expulsion.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment or what information requires citation and/or attribution.

This course aims to develop creative, analytical, and critical thinking skills. Therefore, all assignments should be prepared by the student working individually. Students may not have another person or entity complete any substantive portion of the assignment. Developing strong competencies in these areas will prepare you for a competitive workplace. Therefore, using AI-generated text, code, or other content is prohibited in this course, will be identified as plagiarism, and will be reported to the Office of Academic Integrity.

If found responsible for an academic violation, students may be assigned university outcomes, such as suspension or expulsion from the university, and grade penalties, such as an "F" grade on the assignment, exam, or in the course.

Course Content Distribution and Synchronous Session Recordings Policies

USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relation to the class, whether obtained in class, via email, on the internet, or via any other media. Distributing course material without the instructor's

permission will be presumed to be an intentional act to facilitate or enable academic dishonesty and is strictly prohibited. ([Living our Unifying Values: The USC Student Handbook](#), page 13).

Course Schedule

	Topics/Daily Activities	Readings/Preparation	Deliverables
Week 1 16-Jan	<ul style="list-style-type: none"> · Project Controls – Introduction, Overview, Purpose and Benefits · Cost Elements – Characteristics, types, considerations. 	<ul style="list-style-type: none"> · Syllabus · Glavinich Chapter 1 · Clark-Lorenzoni Chapter 1, 13 	None
Week 2 23-Jan	<ul style="list-style-type: none"> · Scope of Work & Contracts · Budget Development - Work Breakdown Structure, Techniques and considerations 	<ul style="list-style-type: none"> · Clark-Lorenzoni Chapter 9 	Assignment – Cost Elements
Week 3 30-Jan	<ul style="list-style-type: none"> · Capital Cost Tracking – Accuracy, Different Methods and Considerations 	<ul style="list-style-type: none"> · Clark-Lorenzoni Chapter 2, 3, 4 	Assignment – WBS
Week 4 6-Feb	<ul style="list-style-type: none"> · Contingency - considerations and application · Escalation – different methods, considerations, and application 	<ul style="list-style-type: none"> · Clark-Lorenzoni Chapter 10, 11 	Assignment – Cost Tracking
Week 5 13-Feb	<ul style="list-style-type: none"> · Planning vs Scheduling - differences, methods · Considerations, issues · Types of Schedules - advantages, disadvantages, suitability and usage 	<ul style="list-style-type: none"> · Glavinich Chapter 1 · Harris Chapter 1 · Glavinich Chapter 4, 5, 7, 17 · Harris Chapter 2, 3 	Assignment – Contingency & Escalation
Week 6 20-Feb	<ul style="list-style-type: none"> · CPM Network Mechanics - suitability, usage, drawbacks and considerations 	<ul style="list-style-type: none"> · Glavinich Chapters 5, 7, 17 · Harris Chapter 4, 5, 6, 11 	Assignment – Planning & Scheduling
Week 7 27-Feb	<ul style="list-style-type: none"> · Calendar & Constraints - concept and analysis, applications, issues 	<ul style="list-style-type: none"> · Glavinich Chapters 5, 7, 17 · Harris Chapter 4, 5, 6, 11 	Assignment – CPM Network
Week 8 6-Mar	MID-TERM EXAM	Brightspace Quiz Tool	
Week 9 13-Mar	<ul style="list-style-type: none"> · Activity - concept and analysis, applications, issues · Activity Logic - concept and analysis, applications, issues 	<ul style="list-style-type: none"> · Glavinich Chapter 2, 3 · Harris Chapter 7, 9, 22 	Assignment - Calendars
Week 10 20-Mar	NO CLASS SPRING RECESS		
Week 11 27-Mar	<ul style="list-style-type: none"> · Schedule Data Mining – filter, sort and schedule organization · Schedule Qualitative Analysis - Reports, Output, considerations 	<ul style="list-style-type: none"> Glavinich Chapter 8 · Harris Chapter 8, 12, 13, 15, 22 	Assignment – Activity development
Week 12 3-Apr	<ul style="list-style-type: none"> · Cost & Schedule Integration - Resource-loading & Cost-Loading concepts and analysis 	<ul style="list-style-type: none"> · Glavinich Chapters 9, 19, 21 · Harris Chapter 14, 18, 19, 20 	Assignment – Schedule Data Mining
Week 13 10-Apr	<ul style="list-style-type: none"> · Change Control - sources, analysis and considerations · Evaluating Schedule Impacts 	<ul style="list-style-type: none"> · Clark-Lorenzoni Chapter 20 	Assignment – Cost-loading, Resource-loading and schedule analysis

Week 14 17-Apr	· Probabilistic Schedules - methods and considerations	· Glavinich Chapter 16	No assignment.
Week 15 24-Apr	· Linear Schedules - methods and considerations	· Glavinich Chapter 18	Individual Paper is due.
Week 16 1-May	· The Cost & Value of Project Controls	· Clark-Lorenzoni Chapter 27	
FINAL 8-May	FINAL EXAM	Brightspace Quiz Tool	Refer to the final exam schedule in the <i>USC Schedule of Classes</i> at classes.usc.edu .

Statement on University Academic and Support Systems

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#) (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Student Financial Aid and Satisfactory Academic Progress:

To be eligible for certain kinds of financial aid, students are required to maintain Satisfactory Academic Progress (SAP) toward their degree objectives. Visit the [Financial Aid Office webpage](#) for [undergraduate-](#) and [graduate-level](#) SAP eligibility requirements and the appeals process.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline consists of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-2500

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323) 442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.