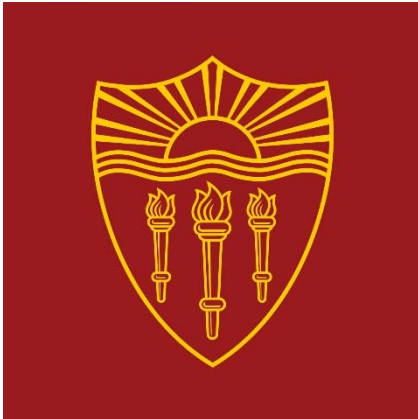


USC Viterbi

School of Engineering
*Sonny Astani Department
of Civil and Environmental
Engineering*



USC
Price

MANAGING AND FINANCING PUBLIC ENGINEERING WORKS

**CIVIL ENGINEERING 552 (CE 552) /
POLICY, PLANNING & DEVELOPMENT 552 (PPD 552)**

3 Units

Spring Semester 2020
Mondays 6:30 – 9:00 PM
Patrick Harder
(213) 612-7859 (office)
pharder@usc.edu

- I. Purpose:** This course is intended to introduce students to the major governmental and private sources for funding and financing the planning, construction, operation and maintenance of public works projects. Specific topics covered include:
- a. Sources of Federal, State, local and private funding for public works projects.
 - b. Traditional and “innovative” mechanisms for financing such projects.
 - c. The role of performance-based technical specifications in the innovative delivery of public works projects
 - d. The use of public-private partnerships to manage and finance such projects.
 - e. Legal and practical limitations on public-private cooperation in the financing and operation of public works projects.
 - f. Civil and criminal sanctions for misuse of public funds.

- II. Course Materials.** The course will discuss such requirements primarily as they apply to transportation infrastructure projects (highways, bridges, subways, airports, etc.). As appropriate, however, I may discuss laws or cite examples relating to other types of public-works projects (including water infrastructure and public building works).
- a. Most of the reading materials are in March, Jeremy G., California Transportation Law, Solano Press Books, 2000. Additionally I will assign readings and videos via link to publication from various governmental and academic sources, including publications from the U.S. Federal Highway Administration (FHWA). Among these publications are:

- b. A Guide to Federal-Aid Programs and Projects: Current Programs and Projects, available on the FHWA's Federal-Aid Program Administration website at <https://www.fhwa.dot.gov/federalaid/projects.pdf>.
- c. Innovative Finance Primer 2010, available on the FHWA's Center for Innovative Finance Support website at https://www.fhwa.dot.gov/ipd/finance/resources/general/project_finance_primer_2010.aspx.
- d. Financial Structuring and Assessment for Public-Private Partnerships, located at https://www.fhwa.dot.gov/ipd/pdfs/p3/p3_primer_financial_assessment_1213.pdf.
- e. Public-Private Partnership (P3) Procurement: A Guide for Public Owners, located at https://www.fhwa.dot.gov/ipd/pdfs/p3/toolkit/p3_procurement_guide_0319.pdf.
- f. Other individual articles and materials may be assigned to students for reading over the course of the semester. I will post these readings on Blackboard.

III. Course grade: The student's grade will be based on the following three factors:

- a. Class participation. Students are expected to engage in class discussions of lecture topics. Additionally, I reserve the right to call on any student during any lecture (10 percent).
- b. Three writing assignments. For two of these assignments, students will be given a set of brief questions regarding public finance or public contracting issues. The other assignment will ask students to write a persuasive paper on a topic to be defined during class (30 percent).
- c. A presentation on a transportation finance-related topic (10 percent)
- d. A group negotiation project (15 percent).
- e. A take-home final examination (35 percent).

IV. Grading policy: Students will receive one of the following grades, based on the following levels of effort and initiative:

A: 95-100% of total points available in the class are attained. In addition to providing correct or defensibly correct answers to the assigned questions and projects, all or almost all completed assignments must show intellectual and practical initiative (i.e., additional legal research to buttress your own arguments,

analysis and refutation of counter-arguments, advancement and defense of "novel" arguments. Comments made in class should reflect similar preparation.

A-: 90-94.9% of total points available in the class are attained. The intellectual and practical initiative described in the above paragraph is present in most of the student's work and comments.

B: 85-89.9% of total points available in the class are attained. The required intellectual and practical initiative described above is present in some, but not most, of the student's work and comments.

B-: 80-84.9% of total points available in the class are attained. The intellectual and practical initiative described above is present in only a small portion of the student's work and comments.

C: 75-79.9% of total points available in the class are attained. Work completed by the student does not show any special intellectual or practical effort. Work is turned in late, hastily done, or is otherwise poor.

C-: 70-74.9% of total points available in the class are attained. Intellectual and practical effort by the student appears to be minimal.

D: 65-69.9% of total points available in class are attained. Students' work and class participation shows no practical effort.

F: Less than 65% of total points in class are attained, or student has violated the academic integrity provisions described below.

Assignment deadlines will be rigorously enforced. Late assignments receive 50% credit and assignments more than one week late without special arrangements with the instructor will receive no credit. There will be limited opportunities to make up credit lost due to late work by performing extra credit assignments as agreed to by the instructor.

V. Course content and schedule:

<p>Session #1 13 Jan 2020 (Note: 20 Jan 2020 is a holiday – no class)</p>	<p>I. Introduction</p> <p>a. Funding for public works projects in today's society: Available funds and political and economic constraints</p> <p>b. The "players": Overview of Federal, State, regional and local government agencies, and types of private entities, involved in raising, allocating and spending funds for public works projects</p>	<p>Reading: TBD</p>
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	<ul style="list-style-type: none"> c. Basic legal background for course: <ul style="list-style-type: none"> 1. Sources of law 	
20 Jan 2020 is a holiday – no class		
<p>Session #2 27 Jan 2020</p>	<ul style="list-style-type: none"> I. Transportation infrastructure planning and programming <ul style="list-style-type: none"> a. Overview of essential Federal and State laws b. Federal Transportation Bills: FAST ACT, MAP-21, SAFETEA-LU: The “3-C” process c. Regional transportation planning <ul style="list-style-type: none"> 1. Regional Long-Range Transportation Plan (RTP) 2. Regional Transportation Improvement Program (RTIP) d. Statewide planning and programming <ul style="list-style-type: none"> 1. Statewide Transportation Plan (STP) 2. State Transportation Improvement Program (STIP) e. Applicable California laws 	<p>Reading TBD</p> <p>Funding and finance writing assignment #1 introduced</p>
<p>Session #3 03 Feb 2020</p>	<ul style="list-style-type: none"> I. Transportation infrastructure funding: Traditional and innovative revenue sources <ul style="list-style-type: none"> a. Introduction: Meaning of “funding”; differences from “financing” b. Traditional transportation infrastructure funding at Federal, State and local levels <ul style="list-style-type: none"> 1. Collection of tax revenues and fees 2. Allocation into specific accounts and grant programs 	<p>Reading TBD</p>

	<ul style="list-style-type: none"> a. Major Federal, California, and local grant programs c. “Innovative” funding sources 	
<p>Session #4 10 Feb 2020 (Note: 17 Feb 2020 is a holiday – no class)</p>	<ul style="list-style-type: none"> I. Transportation infrastructure financing: Traditional and innovative methods <ul style="list-style-type: none"> a. Introduction: Meaning of “financing”; differences from “funding” b. Traditional transportation infrastructure finance techniques <ul style="list-style-type: none"> 1. Municipal bonds and other debt instruments 2. Federal loans and credit assistance 	<p>Reading TBD Writing assignment #1 due</p>
17 Feb 2020 is a holiday – no class		
<p>Session #5 24 Feb 2020</p>	<ul style="list-style-type: none"> I. Finance and funding presentations 	<p>No reading assignment</p>
<p>Session #6 02 Mar 2020</p>	<ul style="list-style-type: none"> I. Public works procurement <ul style="list-style-type: none"> a. History and traditional approaches b. Additional requirements for federally-funded projects c. Legislation d. Innovative procurements <ul style="list-style-type: none"> 1. Enabling legislation 2. Legal and practical limitations 	<p>Reading TBD</p>
<p>Session #7 09 Mar 2020</p>	<ul style="list-style-type: none"> I. Performance specifications <ul style="list-style-type: none"> a. Introduction b. Examples by design discipline c. Justification for use d. Responsibility for design, Spearing Doctrine II. Negotiation workshop 	<p>Reading TBD Public works contracting writing assignment #2 introduced</p>
16 Mar 2020 falls during Spring Break – no class)		

<p>Session #8 23 Mar 2020</p>	<p>I. Design-Build and its Variations</p> <ul style="list-style-type: none"> a. Introduction b. Procurement structure <ul style="list-style-type: none"> 1. Confidential outreach with Proposers 2. Alternative technical concepts 3. Approaches to aesthetic review c. Financial structure <ul style="list-style-type: none"> 1. DBF, gap financing d. Commercial structure <ul style="list-style-type: none"> 1. Design period 2. Construction period 3. Performance specifications vs. prescriptive specifications e. Operating period (DBOM) <ul style="list-style-type: none"> 1. Operating payment and deductions 2. Capital maintenance 3. Technology upgrades 4. Handover f. Case Study and discussion 	<p>Reading TBD</p>
<p>Session #9 30 Mar 2020</p>	<p>I. Public-Private Partnerships – Revenue Risk Transactions</p> <ul style="list-style-type: none"> a. Introduction b. Procurement structure c. Financing structure <ul style="list-style-type: none"> 1. Government subsidy 2. Revenue back-stop; take or pay arrangements d. Commercial structure <ul style="list-style-type: none"> 1. Design period 2. Construction period <ul style="list-style-type: none"> a. Performance specification and 	<p>Reading TBD Writing assignment #2 due</p>

	<ul style="list-style-type: none"> the Spearin doctrine b. Non-compliance regime 3. Operating period <ul style="list-style-type: none"> a. Under-performing projects; revenue sharing for over-performing projects b. Capital maintenance and renewal work reserves c. Technology upgrades d. Handover e. Case Study and discussion 	
<p>Session #10 06 Apr 2020</p>	<ul style="list-style-type: none"> I. Public-Private Partnerships – Availability Payment Transactions <ul style="list-style-type: none"> a. Introduction b. Procurement structure c. Commercial structure <ul style="list-style-type: none"> 1. Design period 2. Construction period <ul style="list-style-type: none"> a. Non-compliance regime; payment deduction for deficiencies in performance d. Operating period <ul style="list-style-type: none"> 1. Payment mechanism 2. Capital maintenance and renewal work reserves 3. Technology upgrades 4. Handover e. Case Study and discussion 	Reading TBD

<p>Session #11 13 Apr 2020</p>	<p>I. Public-Private Partnerships – Pre-Development Agreements and Real Estate Based Transaction</p> <ul style="list-style-type: none"> a. Introduction b. Procurement structure c. Commercial structure <ul style="list-style-type: none"> 1. Lease vs. fee interest transfer 2. Development sequencing 3. Leveraging development opportunities to pay for public works projects 4. Design period 5. Construction period <ul style="list-style-type: none"> a. Non-compliance regime; payment deduction for deficiencies in performance 6. Operating period <ul style="list-style-type: none"> a. Payment mechanism b. Capital maintenance and renewal work reserves c. Technology upgrades d. Handover d. Case Study and discussion 	<p>Reading TBD</p> <p>Persuasive writing assignment #3 introduced</p>
<p>Session #12 20 Apr 2020</p>	<p>I. Civil and criminal sanctions for misuse of public funds</p> <ul style="list-style-type: none"> a. Misrepresentations and false claims <ul style="list-style-type: none"> 1. State and Federal False Claims Acts 2. Whistleblower suits <ul style="list-style-type: none"> a. Retaliation b. Self-dealing 	<p>Reading TBD</p>

	c. Destruction, alteration or falsification of public records or evidence d. Pay to play, bribery e. Foreign Corrupt Practices Act	
Session #13 27 Apr 2020	Class Session 13 – Course Review Take Home Final Examination distributed	Writing assignment #3 due
11 May 2020 Take Home Final Examination due		

VI. Statement on Academic Conduct and Support Systems

- a. **Academic integrity:** Integrity and honesty are fundamental to the pursuit of truth and knowledge at any academic institution. These core values are essential to the function of the academic community at a research institution such as USC. Only by maintaining the highest standards of integrity are the conducting of research, the evaluation of students' academic performance, and the ultimate awarding of degrees meaningful and representative of reality. All students are expected to abide by the principles of academic honesty set forth in the Student Conduct Code

b. **Academic Conduct**

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

c. **Support Systems**

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

studenthealth.usc.edu/counseling

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

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call

suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call

studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | Title IX – (213) 821-8298

equity.usc.edu, titleix.usc.edu

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. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symlicity.com/care_report

Avenue to report incidents of harassment to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

uscса.usc.edu

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

Diversity at USC - (213) 740-2101

diversity.usc.edu

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

dps.usc.edu, emergency.usc.edu

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) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.