

Discover UCI Preview Week Welcome to Civil & Environmental Engineering

UCI Samueli School of Engineering

Welcome to CEE @ UCI



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Civil & Environmental Engineering Why?

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Why Civil and Environmental Engineering?

"No one is interested in an engineer's tale, but everyone needs a civil engineer. Humanity can live without airplanes and missiles, cars and computers.

But a shelter within which to sleep and harbor one's children, a cistern or well for drinking water, a road to travel in the harshest weather, a bridge to cross a river, a sanitary means to dispose of waste—these necessities bestow upon the civil engineer a universal passport."

Melissa Fischer "The Advocacy" 2019



Civil & Environmental Systems Problem Identification, Design Solutions

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A company needs to accommodate a number of employees.
 Given floor area ratios, a multistory building may be required.
 What type and capacity must the footings, columns and beams, and other elements have to accommodate loads?



 A city has increasing population and employment. What modes, capacity, and performance characteristics must the transportation system exhibit to accommodate predicted travel demands?



 A water distribution system is to be designed for a city. What characteristics must the reservoir and other infrastructure components have to accommodate the predicted demand?





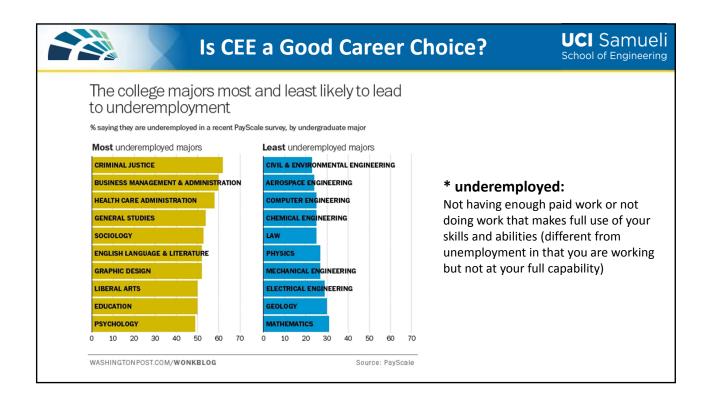
Civil & Environmental Engineering Advising 101. Toolbox

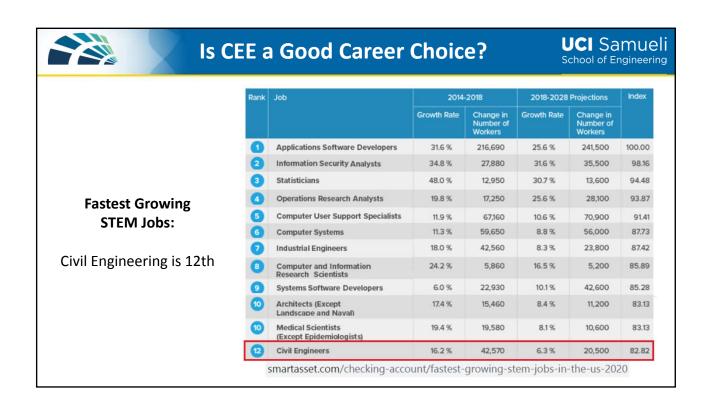
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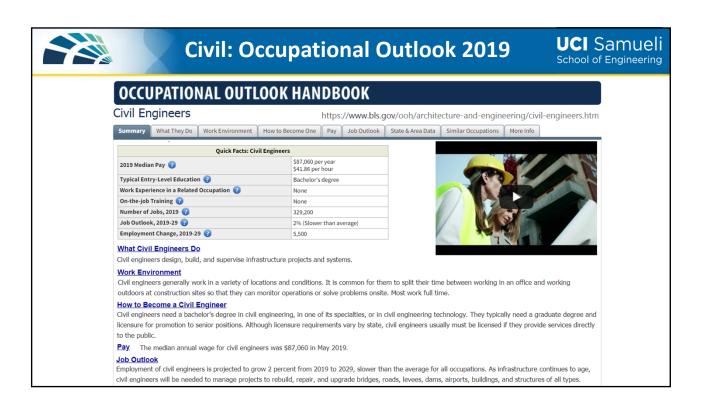
- What was in your Toolbox 4 years ago?
 - * What tools were you been able to add?
 - * How comfortable are you with your level of understanding?
- Learn how to learn...
 - * What can you add to your toolbox? What knowledge and skills can you improve?
- Basic Knowledge:
 - * Math, Science, and computational skills are fundamental to engineering, but so are...
- Attitudes & Behaviors:
 - * Creativity and Innovation; Global Perspective;
 - * Teamwork and Leadership; Ethical Reasoning;
 - * Entrepreneurial Thinking

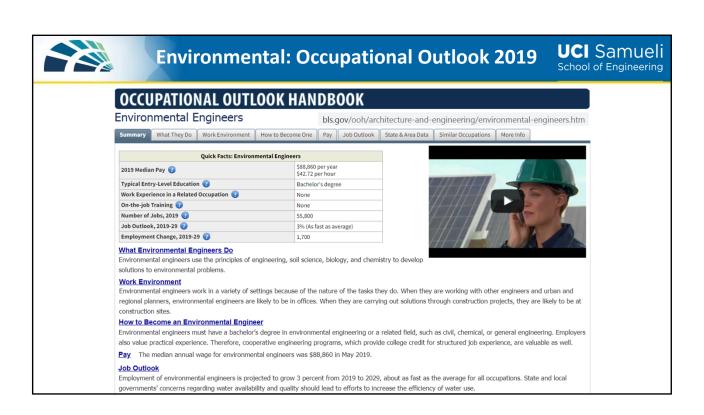














Civil & Environmental Engineering Why Should You Choose CEE @ UCI?

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Whether its civil or environmental engineering, most university programs offer a similar curriculum:

- 2 years of math and 2 years of science
- Fundamental engineering science and skills courses
- · A junior core of advanced courses and labs in the many sub-areas of each field

UCI's programs offer unique opportunities:

- Specializations
- Senior Design
- UCI CEE Affiliates
- Undergraduate Research Opportunities



BS in Civil Engineering Specializations

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Structural Engineering:

Requires CEE155, and three courses from CEE149, CEE151B, CEE152, CEE156, MAE157.

Transportation Systems Engineering:

Requires CEE122 and CEE123, and two courses from CEE124, CEE125, Engr189, EECS70.

Environmental Hydrology & Water Resources:

Requires four courses from CEE163, 164, 165, 169, CEE172, 173, 176, or 178.









BS in Environmental Engineering Engineering Elective Topics

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Water Supply and Resources:

Choose from: CEE171, CEE172, CEE173, CEE176, and CEE178



Choose from: CEE163, CEE165, CEE167, and CEE169

 Atmospheric Systems & Air Poll Control: Choose from: MAE110, MAE115, MAE164, and ESS 112







Civil and Environmental Engineering Senior Capstone Design Sequence

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• CEE181A Fall Quarter:

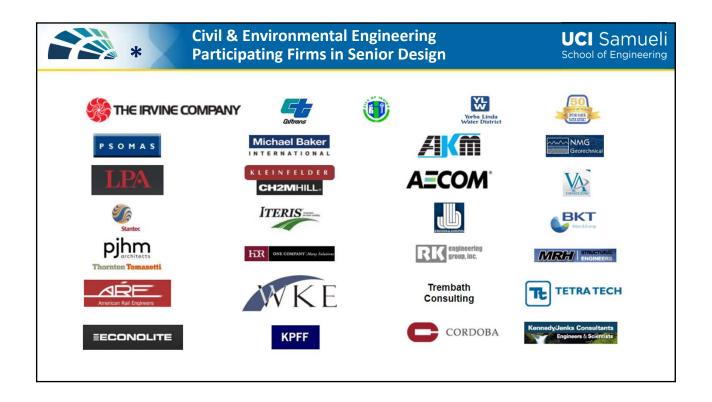
Interdisciplinary student teams work with The Irvine Company to plan the land use and the associated civil infrastructure of a sub-area in the City of Irvine



CEE181B-C Winter/Spring Quarters:

Specialized student teams work with an Industrial Affiliate to design a specific infrastructure element (such as a bridge, a building, a roadway or transit system, or a water supply or control system)





Civil and Environmental Engineering UCI Civil and Environmental Engineering (CEE) Affiliates: • provide an effective means to offer support and guidance to the department, its programs, and its students; • act as an interface between the professional civil and environmental engineering community in Southern California, particularly Orange County, and the university; • include senior executives representing leading civil and environmental engineering firms and public agencies, as well as individual members.



Civil & Environmental Engineering Undergraduate Research Opportunities

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Undergraduate Research Opportunities in the HSSOE:

- Our Freshman Experiential Learning Program provides design/build/test
 experience to undergraduates from their first year on campus. Multidisciplinary
 teams experience real-world product development through planning, research,
 design, manufacturing, and evaluation. The program, the first in the UC system,
 offers UCI students a distinct competitive advantage.
- All undergraduates are encouraged to participate in UCI's Undergraduate
 Research Opportunities Program (UROP) which guides students through all
 phases of the research process, providing them with the necessary skills to
 succeed in their future careers.
- To date, **two-thirds** of HSSOE undergraduate students have participated in faculty-led research projects.





Civil & Environmental Engineering Student Organizations

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Student Organizations

















