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CALIFORNIA STATE UNIVERSITY, LOS ANGELES

Campus as a Living Lab: Introduction to Sustainable Energy & Transportation

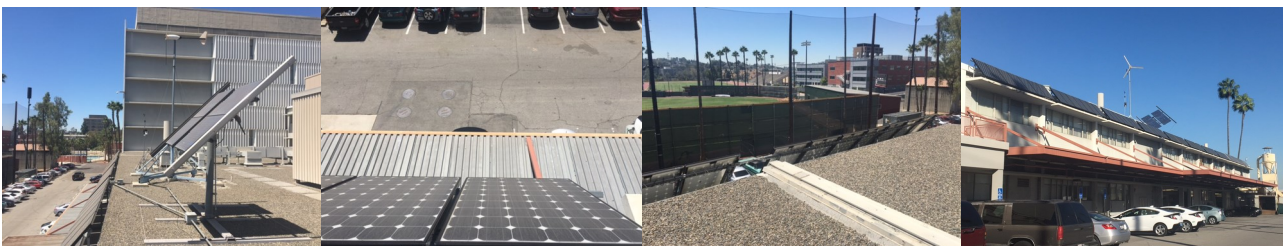
CALL Champion: Brad Haydel, Faculty Partners: David Blekhman and Zanj Avery

Purpose: Introduce students to power generation systems and energy management applications, including chilled water distribution, electricity use data analysis and solar photovoltaic systems.

Phase 1: Student tours of central plant and campus facilities, and the creation of videos to demonstrate comprehension of HVAC systems, including campus chillers, condensers, cooling tower, distribution systems, heat exchangers, mixing valves, refrigeration cycle and controls.



Phase 2: Analysis and interpretation of campus energy data with the use of graphic visualizations. Students will apply MS Excel skills to effectively communicate campus energy trends, including total campus usage, load factor and peak energy demand.



Phase 3: Evaluation of solar photovoltaic system performance and related design components, including solar panels, mounting, cabling, inverters, metering and online energy monitoring system.

Defining Success: Students are able to effectively demonstrate written and presentation skills on the operational principles and physical processes that govern power generation and energy management systems, and leverage acquired skills to solve real-world energy problems.