

**University of Southern California**  
**VITERBI SCHOOL OF ENGINEERING**

Doctor of Philosophy in Chemical Engineering  
*Program Learning Objectives*

The purpose of the USC Viterbi School of Engineering Doctor of Philosophy in Chemical Engineering is to engage the students intensely in various essential facets of the execution of original, high-level research in the discipline specific to the student's area of emphasis, especially the molecular and bio-molecular aspects of chemical, biochemical and energy engineering, or in related areas. Graduates are prepared for employment in any research-centric arena, including research labs in the private and public sectors, and in teaching and research at universities.

- USC Viterbi School of Engineering doctoral students enrolled in the PhD degree program in Chemical Engineering will demonstrate understanding of contemporary research in the fundamental physical, chemical and biological sciences in addition to the engineering principles built upon them, and be able to implement innovative research practices under the guidance of their faculty advisor and in concert with their research team.
- USC Viterbi School of Engineering doctoral students enrolled in the PhD program in Chemical Engineering will demonstrate understanding of and ability in applying contemporary research in Chemical and Biochemical Engineering to industry contexts and be able to engage in innovative practices informed by such research pertinent to Chemical Engineering in diverse contexts.
- USC doctoral students enrolled in the PhD degree program in Chemical Engineering will demonstrate understanding of leading research teams in Chemical and Biochemical Engineering by mentoring undergraduate and master's students and fellow Ph.D. students who are less advanced than they are in their doctoral program.
- USC doctoral students enrolled in the PhD degree program in Chemical Engineering will launch an independent research agenda in Chemical and Biochemical Engineering under the guidance of their faculty advisor.
- USC doctoral students enrolled in the PhD degree program in Chemical Engineering will complete and orally defend an acceptable dissertation based on original investigation and supervised by their dissertation committee. The dissertation must show mastery of an area of emphasis within Chemical Engineering, capacity for independent research, and a scholarly result.