

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

Master of Science in Systems Architecting and Engineering  
Program Learning Objectives

The purpose of the USC Viterbi School of Engineering Master of Science in Systems Architecting and Engineering program is to prepare students for: high-level professional employment in the architecting, engineering, analysis, and management of new systems, or upgrade of existing systems; or to pursue advanced graduate studies focused on related problems in the field. Graduates may choose to pursue employment in aerospace, defense, medical devices, and energy industries, or advanced graduate study relating to complex systems design and management, engineered resilient systems, adaptable architectures, or domain-specific engineering advances.

- Upon completion of the USC Master of Science in Systems Architecting and Engineering, students will be able to demonstrate broad understanding of complex systems; particularly with respect to system decomposition; tradeoffs analysis; systems architecting; system and system-of-systems integration; relevant cognitive and social constructs; and model based methods.
- Upon completion of the USC Master of Science in Systems Architecting and Engineering program, students will be able to apply critical thinking and systems thinking skills pertinent to Systems Architecting and Engineering (SARE) duties in their employment and professional practice.
- Upon completion of the USC Master of Science in Systems Architecting and Engineering program, students will be able to work in diverse global contexts and apply universally respected and globally-centric practices pertinent to SARE duties in international and domestic contexts.
- USC VSOE students enrolled in MSSARE program will demonstrate understanding of contemporary research, result and application areas relating to complex systems, particularly aerospace, energy and healthcare.