University of Southern California
VITERBI SCHOOL OF ENGINEERING

<u>Master of Science in Systems Architecting and Engineering</u>
Program Learning Objectives

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

- be able to apply critical thinking and systems thinking skills pertinent to Systems Architecting and Engineering (SARE) duties in their employment and professional practice;

- 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; and

- demonstrate understanding of contemporary research, result and application areas relating to complex systems, particularly aerospace, energy and healthcare.