

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

Bachelor of Science in Applied Mechanics  
Program Learning Objectives

The purpose of the USC Viterbi School of Engineering Bachelor of Science in Applied Mechanics (BSAM) program is to prepare students for professional employment in the broad area of applied mechanics, including the sub-disciplines of solid mechanics, structural mechanics, geomechanics, fluid mechanics, flow through porous media, thermal analysis, biomechanics, computational mechanics, stability, modern materials, composite materials, fracture mechanics, systems and control, and probabilistic mechanics. Graduates will apply their knowledge in employment in private engineering firms or in public agencies associated with the fields of civil engineering, mechanical engineering, aerospace engineering, biomedical engineering, petroleum engineering, materials science, or a wide variety of other mechanics oriented fields. Students will be prepared to pursue graduate studies focusing on one or more of the mechanics sub-disciplines.

- Upon completion of the BSAM, students will have a broad understanding of mathematics, science and engineering and will be able to formulate and solve engineering problems, associated with a variety of professional fields. In their studies, students have the flexibility to build academic programs from the course work in various engineering departments presenting mechanics based course work.
- Upon completion of the BSAM, students will be able to apply critical technical skills to design components and systems, satisfying specified design criteria and constraints, and to characterize and solve engineering problems utilizing advanced techniques and modern engineering tools.
- Upon completion of the BSAM, students will be able to apply critical management and communication skills to effectively lead engineering organizations in the completion of complex projects involving multi-disciplinary teams and possibly geographically separated work places.
- Upon completion of the BSAM, students will be able to work in a manner consistent with understood professional standards and ethical responsibilities.
- Upon completion of the BSAM, students will have the broad background to allow them to understand and appreciate important issues, in the economic, environmental, and societal context, to allow them to associate engineering decisions with their impacts, and to appreciate the domestic and international relationships and contexts that are a part of the current engineering environment.