University of California, Santa Barbara
Program Learning Outcomes

MS in Mechanical Engineering

Upon graduation with a MS in Mechanical Engineering:

Core Knowledge

- Students will be able to demonstrate a broad knowledge in the field of Mechanical Engineering with specific command of at least two general areas including (i) computational science and engineering, (ii) dynamical systems, control and robotics, (iii) fluid mechanics and thermal sciences, (iv) micro- and nanoscale engineering and (v) solid mechanics, structures, and materials engineering.
- Students will be able to demonstrate a deep understanding and expertise in one or more areas of Mechanical Engineering specialization.

Research Methods and Analysis

- Students will be able to develop of a strong theoretical and/or experimental and/or computational background.
- Students will be capable of conducting an independent research project.
- Students will be able to organize results into a coherent manuscript.

Pedagogy

- Students will develop the ability to communicate technical material.
- Students will be able to present their research effectively through oral and written presentations and through the development of supporting materials.

Scholarly Communication

- Students will be able to create effective written technical arguments.
- Students will write in a level and style of English consistent with that found in leading academic conferences and journals.
- Students will understand and properly use citations and references to make their technical arguments and justify critical assumptions.
- Students will be able to present and defend their findings at seminars and potentially at conferences.

Continued on Page 2

University of California, Santa Barbara
Program Learning Outcomes, continued

Professionalism

- Students will understand the importance of contributing technical advances to their scientific communities.
- Students will understand their career options post-graduation, both industrial and academic.
- Students will demonstrate a commitment to the thoughtful consideration of fundamental principles of ethical professional conduct.

Independent Research

- Students will be capable of developing their own research project that meets high standards in theory and/or experiment and/or computation.