



# SUSTAINABLE ENGINEERING

nextgov.com

## Track Description

Sustainable engineering relies on designing, manufacturing, and operating systems in such a way that their energy and resource consumption does not negatively shape our ecosystems in the decades to come and undermine the ability of future generations of achieving the long-lasting improvement of the human condition. Enhancing sustainability through engineering hinges on recognizing that conventional engineering problems transcend the traditional boundaries of engineering and require an integrative approach that also encompasses complex social, environmental, political, and economic systems. This thrust allows students to build on their core courses to design technologies that can control or even prevent environmental risks, while implementing processes that will not deplete resources for future generations.

## Elective Courses (select four)\*

CE 341 – Intro to Environmental Engineering  
ME 379M – Enhancing Sustainability Tribology  
ME 336P – Concepts in Nuclear & Radiation Eng.  
ME 337 – Nuclear Environmental Protection  
ME 378M – Nanotech for Sustainable Develop.  
ME 363M – Energy Technology and Policy  
ME 374T – Renewable Energy Technology

## Faculty Mentors

Filippo Mangolini

[Filippo.Mangolini@austin.utexas.edu](mailto:Filippo.Mangolini@austin.utexas.edu)

Michael Webber

[Webber@mail.utexas.edu](mailto:Webber@mail.utexas.edu)

## Organizations & Societies

AIAA, APS, ASME-AESD, SAE, SFPE

For course descriptions visit the University Catalog.

\* Please contact faculty mentors to petition other courses.



The University of Texas at Austin

Walker Department  
of Mechanical Engineering  
*Cockrell School of Engineering*

## Industry Applicability

This certificate program area is appropriate to prepare mechanical engineers for jobs in industry that deal with one or more of the following:

- Materials management and waste reduction in the design and manufacturing of mechanical systems.
- Design of renewable energy storage and conversion systems (batteries, fuel cells, supercapacitors).
- Enhancing the energy efficiency of complex systems (such as power generating facilities) to minimize environmental impact and fuel consumption.
- Mitigating the environmental, economic, and technical problems involved in the control or minimization of radioactive waste, pollutants in the air and water.



The University of Texas at Austin  
Walker Department  
of Mechanical Engineering  
*Cockrell School of Engineering*