

Amgen Seminar Series in Chemical Engineering
in
Cherry Auditorium, Kirk Hall, 1 PM

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Innovation for a Crowded Curriculum: A Textbook Companion for Thermodynamics

By

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Energy is a basic human need; technologies for energy conversion and use are fundamental to human survival. As energy technology evolves to meet future demands for development and ecological sustainability, engineers need to have up-to-date skills and knowledge to meet the creative challenges our energy problems demand.

Presently, most thermodynamics education adheres narrowly to an unspoken canon, grounded in 19th century developments of the steam engine in Europe, and subsequent fossil fuel technologies. Some texts have added updates, sidebars and problems on more recent technologies, including renewable energy, but for the most part they have not been reframed around the broader educational outcomes engineers need to attain to create the changes needed for a sustainable and just energy future.

A series of learning modules have been designed for compilation in a textbook companion, connecting traditional textbooks with these broader skill and knowledge sets, leveraging pedagogies that foster intentional learning through hands-on and/or independent student explorations. These modules develop moral reasoning, critical thinking, social engagement, and communication skills as essential complements to the energy engineer's technical expertise. In this seminar, attendees will have the opportunity through an interactive exercise to provide feedback on a module designed with chemical engineering students in mind.

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