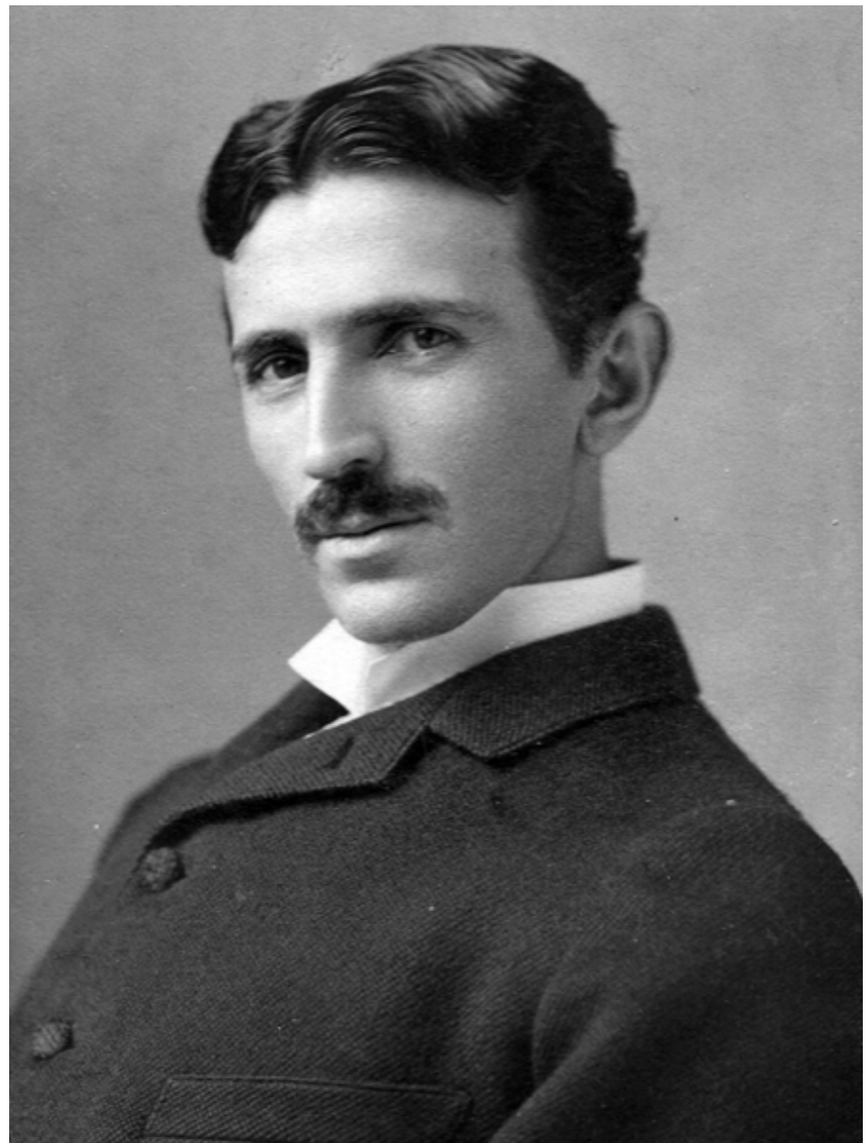
If you want to find the secrets of the universe, think in terms of energy, frequency and vibration.

Nikola Tesla



Arizona State University
SES 194

Energy in Everyday Life

About This Course

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Energy is a concept that threads everyday life and at the heart of understanding the physical world around us.

What is energy?

How is energy used by acoustical, biological, chemical, electrical, mechanical, and nuclear systems?

What would our world be like if there was a nearly infinite supply of clean, inexpensive clean energy?

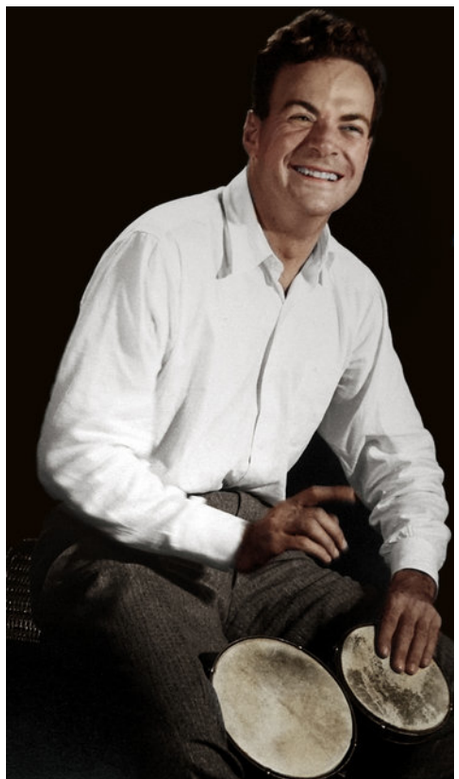
Our course is designed to help master the key concepts of energy generation, delivery, conversion, efficiency and what makes energy universal.

Our course will also assist in mastering a skill that crosscuts scientific disciplines: forming an order-of-magnitude estimate of a quantity from common knowledge, observation, thinking critically, and interpreting data.

We will deconstruct complex energy-related questions into a series of smaller questions, each of which is uncertain to a greater or lesser degree.

The Scientific Method:

First you guess. Don't laugh, this is the most important step. Then you compare the consequences to experience. If it disagrees with experience, the guess is wrong. In that simple statement is the key to science. It doesn't matter how beautiful your guess is or how smart you are or what your name is. If it disagrees with experience, it's wrong.
That's all there is to it.



Richard Feynman

Learning Objectives

After taking this course students will be able to:

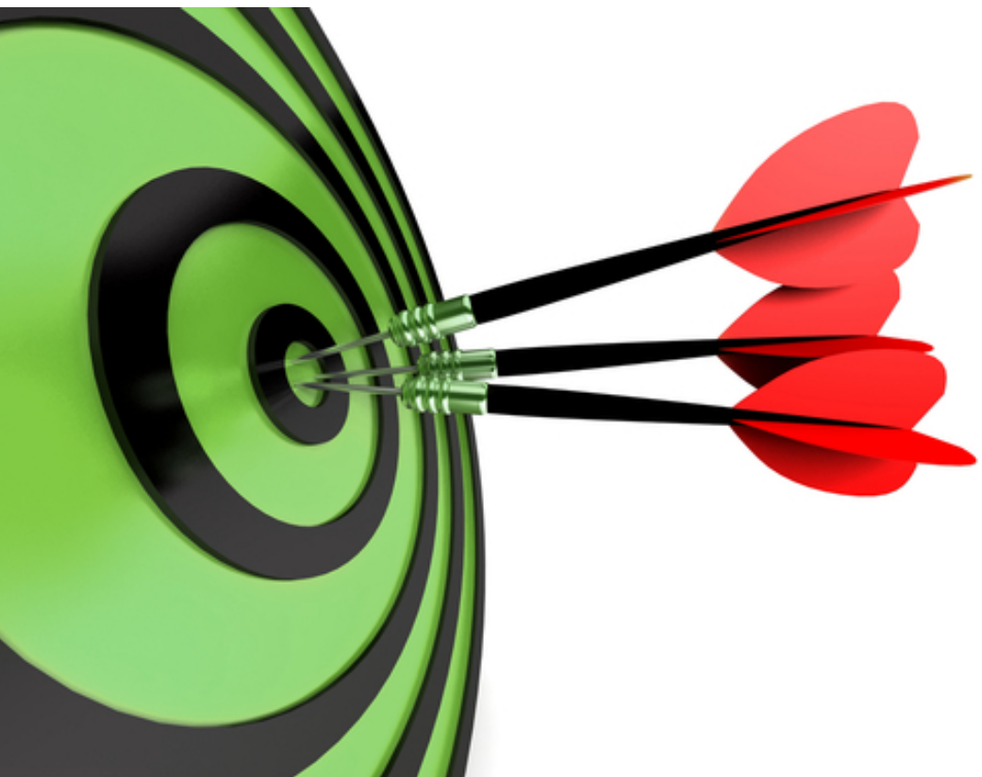
1. **Use the scientific method and understand how it helps us not fool ourselves.**

2. **Use concepts from everyday life, science, and engineering to make order-of-magnitude estimates to describe features of our physical world.**

Learning Objectives

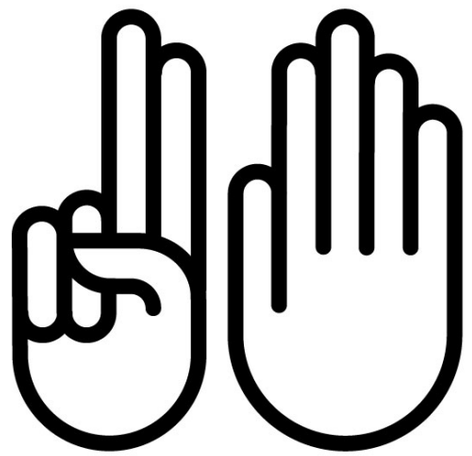
3. **Define characteristics that are essential to flows and transformations of energy.**

4. **Critically compare and contrast modes of energy generation, transport, conversion, and use.**



Our Seven Modules

1. **Mechanical energy**
2. **Chemical fuels**
3. **Thermodynamics**
4. **Nuclear Fuels**
5. **Electricity**
6. **Alternate Fuels**
7. **Order of Magnitude Estimates**



How to Succeed in this Course

1. Check your ASU email regularly.
2. Log on the course web site daily.
3. Communicate with your TAs and instructor.
4. Don't fall behind on assignments.
5. Honor the assignment and exam deadlines.