

Introduction to Energy Management Systems:

A college-level course module from the DOE



Energy Management Systems (EnMS) increase energy efficiency, cut energy bills, and help organizations reach their climate goals. Businesses, institutions, and government facilities across the country and around the world are rapidly adopting these powerful tools.

To help prepare the next generation of energy management professionals, the U.S. Department of Energy (DOE) is offering *Introduction to Energy Management Systems*, a course module on the DOE's 50001 Ready energy management framework and the international ISO 50001 standard on which it's based. The DOE is offering free instructional resources and material designed to integrate with existing courses on energy systems, energy efficiency, and energy management.

Students will gain an understanding of energy management systems in general, and the DOE's online 50001 Ready Navigator platform in particular. The Navigator is a no-cost, step-by-step, self-paced framework that enables organizations to create energy management systems through a series of discrete, actionable tasks with detailed implementation guidance. Students who finish the material are eligible to receive a DOE course completion certificate that can help differentiate them in the job market.

Instructional material includes:

- Overview document on using material
- Syllabus
- PowerPoint slides for four 75-minute lectures
- Homework discussion topics
- Available on request:
 - DOE course completion certificates
 - In-depth 8-lecture course module

Introduction to Energy Management Systems: *Course contents*



Lecture 1: Introduction

- Benefits of implementing an energy management system
- Relationship between ISO 50001 and DOE 50001 Ready
- Plan-Do-Check-Act cycle and 50001 Ready
- External & internal issues affecting EnMS
- Energy-related legal and other requirements relevant to the EnMS
- Defining scope and boundaries of an EnMS



Lecture 2: Leadership and Planning

- Attributes of an energy policy
- Common barriers to implementing an EnMS
- Identifying and quantifying significant energy uses
- Project selection methods



Lecture 3: Planning

- Energy performance indicators and baselines
- Documentation to ensure EnMS effectiveness
- EnMS and procurement decisions



Lecture 4: Performance Evaluation and Improvement

- Evaluating effectiveness of an EnMS
- Monitoring energy performance improvements
- Identifying and correcting non-conformities
- Continuous improvement