

# ENERGY RESOURCE MANAGEMENT

## DISTANCE LEARNING

### About the program

Competing demands for energy use and the need for smaller energy footprints require leaders across a wide range of industries to improve their understanding of the complex issues surrounding energy management. The UC Davis Extension Certificate Program in Energy Resource Management is designed for professionals in engineering, construction planning and design, and facility-plant operations who seek to expand their expertise in this critical area.

This program covers the entire range of issues involved in understanding and managing energy in any industry, whether heavy use (food processing) or lighter use (an office complex). This six-course (17 units) program focuses on the four key issues in energy management: supply, demand, regulatory and environmental. You will develop a comprehensive and holistic appreciation of all major operational, technological, environmental and regulatory elements applicable to commercial and industrial energy resource management. Additionally, a unique course in leadership techniques helps you to become a leader in this field.

This certificate program aligns with the Association of Energy Engineers requirements for Certified Energy Manager (CEM) and Business Energy Professional (BEP) in Energy Fundamentals.

### How you will benefit

- Explore the practical, sustainable application of contemporary energy resource management.
- Learn best practices and discover techniques and resources to improve business competitiveness and ensure regulatory compliance.
- Keep apprised of new and emerging developments, technologies and regulations.
- Analyze supply side sourcing and procurement portfolio strategies.
- Examine energy security risk analysis methods.
- Learn methods for financing energy management projects.

### Who should attend

This program benefits those wanting to distinguish themselves as energy resource management experts and draws from a wide variety of disciplines, including engineering, construction planning and design, and facility-plant management and/or operations, such as:

- energy analysts, managers and auditors
- chief sustainability officers
- consulting energy engineers and architects
- demand side management auditors and managers

### Program offered entirely online!

For more information, please contact Jim Smith at [jsmith@unexmail.ucdavis.edu](mailto:jsmith@unexmail.ucdavis.edu)

To enroll, please call (800) 752-0881 or visit our Web site.

[www.extension.ucdavis.edu/certificates](http://www.extension.ucdavis.edu/certificates)



Course descriptions  
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**UC DAVIS**  
**EXTENSION**  
CONTINUING AND PROFESSIONAL EDUCATION

The Certificate Program in **Energy Resource Management** includes six required courses (17 units).



**Introduction to Energy Resource Management**

Examine the four major components of energy management—supply, demand, regulation and environment—and the concepts and principles behind successful energy management. Topics include energy auditing and economic analysis; management control and maintenance systems; sustainability and high performance green buildings; alternative energy systems; boilers and fired systems; cogeneration and HVAC systems; ground source heat pumps; lighting and electrical management; natural gas purchasing; thermal storage; codes and standards; indoor air quality; utility deregulation and energy systems outsourcing; energy security risk analysis methods; and financing energy management projects.

Plant energy managers, utility energy auditors and analysts, consulting energy managers and engineers, demand side managers, architects, construction planners and designers will benefit from this overview and prerequisite for the UC Davis Extension Energy Resource Management Certificate Program

**Energy Management: Supply**

Learn to conduct market assessments and to develop sourcing and procurement strategies. Topics include energy management control systems, natural gas purchasing, opportunities in the spot market, thermal energy storage, alternative energy supplies, energy security and energy trading. You also explore reliability and risk analysis methods, financing projects and tax considerations as well as strategic planning, cogeneration and the options, costs, benefits and constraints of “green sourcing.”

**Energy Management: Regulatory**

Learn the difference between regulations and tariffs pertaining to electrical generation, transmission and distribution and those pertaining to gas production, transmission and distribution. You will also survey indoor air quality standards, rate structures and how to conduct a load study. Explore emerging state and federal regulations and codes, as well as codes and standards for commercial and industrial uses and applications.

**Energy Management: Demand**

Learn how to conduct energy audits that integrate specialized auditing tools, energy economics, metering, performance contracting and financing with demand response, measurement, verification, equipment, applications and systems. Additional topics include quantitative analysis of WAGES (water, air, gas, electricity and steam); optimization and analysis of performance for new and existing buildings; an overview of Leadership in Energy & Environmental Design (LEED); industrial insulation, waste-heat recovery and HVAC operations; fleet operation and maintenance; the latest lighting technologies and products; measurement and verification of energy savings; project management; and best practices and benchmarking.

**Energy Management: Environment**

Explore the range of environmental issues affected by energy use. Gain perspectives on current trends and technologies and examine the environmental fundamentals—planning, development and implementation—of WAGES (water, air, gas, electricity and steam) systems as well as renewable energy systems; purchasing/trading carbon offsets; the Climatic Change Action Plan; and best practices and methodologies for financing “green” investments.

**Energy Management: Leadership**

Examine the leadership issues involved in managing energy from organizational behavior and change management to project management and communication skills. Gain insight into how to develop your own leadership style. Learn how to successfully move your organization ahead by creating effective strategies for energy management, including your most important asset—people.



These courses may be taken individually or as part of the Energy Resource Management Certificate Program —all offered entirely online!

QUARTERLY SCHEDULE OF COURSES	UNITS	F	W	SP	SU
<b>REQUIRED COURSES (17 units)</b>					
Introduction to Energy Resource Management	3	▲		▲	
Energy Management: Supply	3				▲
Energy Management: Regulatory	3			▲	
Energy Management: Demand	3	▲			
Energy Management: Environment	2		▲		
Energy Management: Leadership	3				▲
▲ Distance Learning format					

Schedules are subject to change. Check our Web site for the latest schedule and course information: or call (800) 752-0881. F=Fall W=Winter SP=Spring SU=Summer

[www.extension.ucdavis.edu/certificates](http://www.extension.ucdavis.edu/certificates)

This program is an approved educational provider for the following organization:

- Association of Energy Engineers