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## ES 69- *“Energy Use- Past , Present and Future”*

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De Anza College- Steve Murphy  
FALL QUARTER 2004

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## ES 69- Class Overview

- **Introductions**
- **Class website**
  - <http://bhs.deanza.edu/faculty/sMurphy>
- **DeAnza Certificate program overview**
- **Syllabus review**
- **Listserv signup (“On-line Orientation”)**
  - <http://distance.deanza.fhda.edu>

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## Energy Management Technology: Why are we here ?

- **Energy Careers**
  - Front page news !!
  - Increased public awareness
  - Take advantage of “Wave of Opportunity”
- **Opportunity to:**
  - reduce air pollution
  - reduce acid rain
  - reduce global warming
  - reduce dependence on non-renewable energy resources and OPEC
  - implement renewable energy sources

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## EMT: Why are we here ?

- Move community college campuses and other facilities towards energy independence.
- Train existing campus workforce and contractors.
- Establish “**Campus Energy Teams**”.
- Increase awareness of campus/building energy conservation opportunities.
- More clearly understand current energy policies and standards.

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## Careers in Energy Management

- Architecture
- Energy Service Companies (ESCO's)
- Utilities
- Facilities technicians
- Facilities managers
- Facilities engineers
- HVAC service technicians
- HVAC Consulting engineering
- HVAC contracting
- Electrical contracting
- Temperature controls engineering and installation
- Energy auditors

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## Review of SEMP Model

- **SEMP:** Statewide Energy Management Program
- “**3-Tier Approach**” to Develop EMT Policy
  - Board Policy Statement
  - Establish Administrative Guidelines for Implementing Board Policy
  - Recognize State Policy Recommendations
    - Assembly Bill AB 29X (approved 4/11/2001)
    - Incentives/awards available to CCC (TBD)
    - Establish \$\$\$ fund/provide technical support for CCC

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## SEMP Model Board Policy (cont.)

- **Administrative Guidelines for Implementation of Board Policy:**
  - CCC Mission Statement
  - CCC Goals/Objectives
  - **Promoting CCC Leadership at District Level !**

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## SEMP Model Board Policy

- **Board Policy Statement**
  - **Mission Statement**
  - **Goals**
    - Energy efficiency improvement; reduction of greenhouse gases; reduction of fossil fuel use; expansion of renewable energy use; improved transportation efficiency; water conservation.
  - **Establish EMT Performance Criteria**

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## Energy Policy/Mandates

- Energy Policy Act of 1992 (EPACT)
- Executive Order 13123
- California State Codes/Policy
  - ASHRAE Standard 90-80
  - Title 24
  - Executive Orders (August 2000)
    - D-15-00: **Reliability/Demand Reduction**
    - D-16-00: **Sustainable Buildings**

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## Energy Policy/Mandates

- **California State Policy:** (cont.)
  - \$ 800 Million energy efficiency/demand reduction program announced Feb 2001
    - 10 point Energy Conservation and Efficiency Plan
  - Recent Legislation
    - AB 970 (California Energy Security Act of 2000) in effect until Jan 1, 2004
    - AB 995 (Renewable energy production incentives) in effect from Jan 2002 - Jan 2012

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## CCC Leadership Role in EMT

- **District Energy Team**
  - Senior District Official/Senior College Official
  - Establish “College Energy Taskforce”
  - Designation of “EMT Technician”

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## CCC Leadership Role in EMT

- **“Life-cycle Cost Analysis” to be used for decision making.**
  - **Scorecard** of Energy Efficiency Upgrades  
Scorecard evaluations based on District’s progress towards implementing Board Policy Guidelines.  
Scorecard shall be included in Annual Report to Board of Trustees.

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## CCC Leadership Role in EMT

- **Energy Surveys/Audits:**
  - **Prioritization Survey**
  - **Comprehensive Facilities Audits**
    - Establish 5 year plan
    - 20% of facilities completed each year
      - Independently
      - Performance Contracting
      - Utility service contracts
    - 3 year "grandfather clause"
    - Leased facilities should be included if practical

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## CCC Leadership Role in EMT

- **Energy Management Strategies/Tools**
  - **Energy savings will be used to:**
    - Purchase new energy efficient equipment
    - Finance energy efficiency retrofit projects
    - Support CCC EMT Vocational programs
    - Support faculty/staff fellowships
    - Provide energy efficiency training for staff, faculty and administration
    - Reward facilities departments

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## CCC Leadership Role in EMT

- **Energy Management Strategies/Tools:**
  - **Use of innovative Financing/Contracts**
  - **Utility Rebates**
  - **Utilization of "Energy Star" products/buildings**
  - **Sustainable Building Design**
  - **Facility Efficiency Improvements**
  - **Off-Grid Power Generation**

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## CCC Leadership Role in EMT

### ■ College EMT Performance Evaluation:

- Measurement/Management/Reward
  - Accountability- **ANNUAL REPORTS REQ'D**
  - Incentive rewards
  - Energy Team Position Descriptions/Performance Evaluations
  - Retention of Savings and Rebates
  - Training and Education
  - Showcase Facilities

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