

ENRG 62 - Energy Audit Report Writing

COURSE DESCRIPTION: Capstone course for commercial buildings energy audit program. Concurrent enrollment with ENRG 63 Field Work in Commercial Energy Audit. Writing compelling and accurate technical report of audit findings for non-technical audience. Elements, formats, templates, structure, graphics.

36 Lecture Hours

LEARNING OUTCOMES:

- Assess the purpose of the audit report, scope of work, and level of detail required for the report
- Organize information and create a plan for report writing
- Manage time effectively to meet client and employer needs
- Summarize audit findings and recommendations clearly and concisely
- Utilize tables, charts, and graphics to illustrate information and improve client understanding of findings
- Formulate prioritized recommendations that evaluate energy efficiency measure (EEM) recommendations in terms of energy savings and financial costs/ benefits to the client

COURSE TOPICS:

- I. Purpose of the audit report
 - A. Information
 1. To communicate audit findings to client building owner/manager
 2. To recommend energy efficiency measures (EEMs) to the client
 3. To provide financial analysis for the EEMs recommended to aid the client in making decisions about implementing EEMs
 - B. Proposal
 1. Proposes actions that can be taken by the client
 2. Possible sales tool for future services from the auditor
 - C. Evidence of client's compliance with local codes requiring audits
- II. Report format
 - A. Companies performing audits frequently have proprietary template
 - B. Executive summary showing scope of work performed and providing brief description of report findings
 - C. Content is determined by level of audit (ASHRAE Level 1, 2, or 3)
 - D. Information must be presented clearly and concisely
 - E. Technical information needs to be presented in prose for a non-technical audience, with supporting documentation
 - F. Use of tables, charts, graphics to illustrate information
- III. Time management
 - A. Time constraints in preparing report
 - B. Client expectations of timeliness
 - C. Review original scope of work or contract
 - D. Organizing data and information prior to report writing
 - E. Creating an outline or template for the report
- IV. Report for an ASHRAE Level 1, walk-through basic energy analysis
 - A. Most basic of analysis levels requires a brief report
 - B. Information contained in report
 1. Energy use intensity (EUI) information
 2. Preliminary energy use intensity (EUI) analysis is conducted prior to walk-through
 3. Compile billing data
 4. Calculate kBtu/sf or MJ/m²
 5. Compare to similar buildings
 - a. Energy Star / CBECs shows EUI nationally

- b. Energy IQ (www.energyiq.lbl.gov) shows EUI for California
 - c. Client's portfolio of other buildings
 - d. Correct for weather and use schedules
- 6. Estimate savings from utility rate change
 - a. Summarize utility data
 - b. Estimate of financial savings if EUI met target
- 7. Recommend the low-cost and no-cost EEMs and estimate of savings from each
- 8. Identify capital projects
- V. Report for an ASHRAE Level 2 energy survey and engineering analysis
 - A. Most common type of audit requires a more comprehensive report
 - B. Information contained in report
- VI. Report for an ASHRAE Level 3 detailed survey and analysis
 - A. Highest level of audit and energy analysis requires additional report content
 - B. Level 3 report contains all information of Level 2 report, plus
 - 1. Additional testing and monitoring data
 - 2. Detailed system modeling
 - 3. Schematic layouts for EEM recommendations
 - 4. Detailed descriptions of recommended EEMs
 - 5. Detailed EEM cost estimates

TYPES OF ASSIGNMENTS:

- I. In-class
- II. Out-of-class

TEXTBOOKS & RESOURCES:

- Double-click to start entering values