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CERTIFIED HVAC DESIGNER CHD OVERVIEW

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ONLINE TRAINING BY KRISHNAJI PAWAR

LEED AP(BD+C), GSAS CGP, GCP, ISO 14001

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MODULE

6

Engineering, Economics, and Design Decision-Making

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CERTIFIED HVAC DESIGNER CHD OVERVIEW

Engineering economics is a crucial aspect of engineering that integrates economic principles with design and decision-making processes. It provides an analytical framework to evaluate the costs, benefits, and overall feasibility of engineering projects and designs.

Learning Objectives

- Introduction
- HVAC Fundamentals
- The Air-Conditioning Process
- HVAC System Concepts and Process
- HVAC Systems Design
- **Engineering, Economics, and Design Decision-Making**
- Certified HVAC Designer (CHD) Specialty Certification
- Summary and Resources
- Certified HVAC Designer - CHD Practice Test V.4.1



INTRODUCTION

- Time Value of Money (TVM): Underpins financial calculations like present worth, future worth, annual worth, and internal rate of return.
- Cost Estimation: Predicts costs associated with a project or design choice.
- Economic Evaluation Methods: Net Present Value (NPV), Benefit-Cost Ratio (BCR), and Payback Period.
- Design Decision-Making: Selects the best course of action from multiple alternatives influenced by technical, economic, and social factors.

Integration:

- Engineering economics and design decision-making are crucial for successful execution of engineering projects.
- By systematically evaluating costs, benefits, and alternatives, engineers can make informed decisions that optimize resources, maximize returns, and minimize risks.

RECURRING COSTS AND MAINTENANCE

- Recurring costs are regular expenses incurred by businesses over time.
- Essential for effective financial planning, budgeting, and operational efficiency.

Utilities Costs

- Include essential services like electricity, water, gas, sewage, and telecommunications.
- Components include fixed costs, variable costs, and demand charges.
- Estimating utilities costs involves considering historical usage data, seasonal variations, and anticipated changes in operations.

Maintenance Costs

- Involve expenses incurred to maintain equipment, facilities, and infrastructure.
- Categories include preventive, corrective, and predictive maintenance.
- Costs are calculated by accounting for labor, materials, and overhead.
- Historical data is used to estimate future maintenance needs and costs.
- Incorporating utilities and maintenance costs provides a holistic view of recurring expenses.



LEED CERTIFICATION: A GLOBAL GREEN BUILDING RATING SYSTEM

- LEED is the world's most widely used green building rating system.
- Provides a framework for healthy, efficient, cost-saving green buildings.
- Offers environmental, social, and governance benefits.
- Supports over 197,000 projects in 186 countries and territories.
- LEED v5 is the latest version, aligning with a low-carbon future.
- Addresses equity, health, ecosystems, and resilience.





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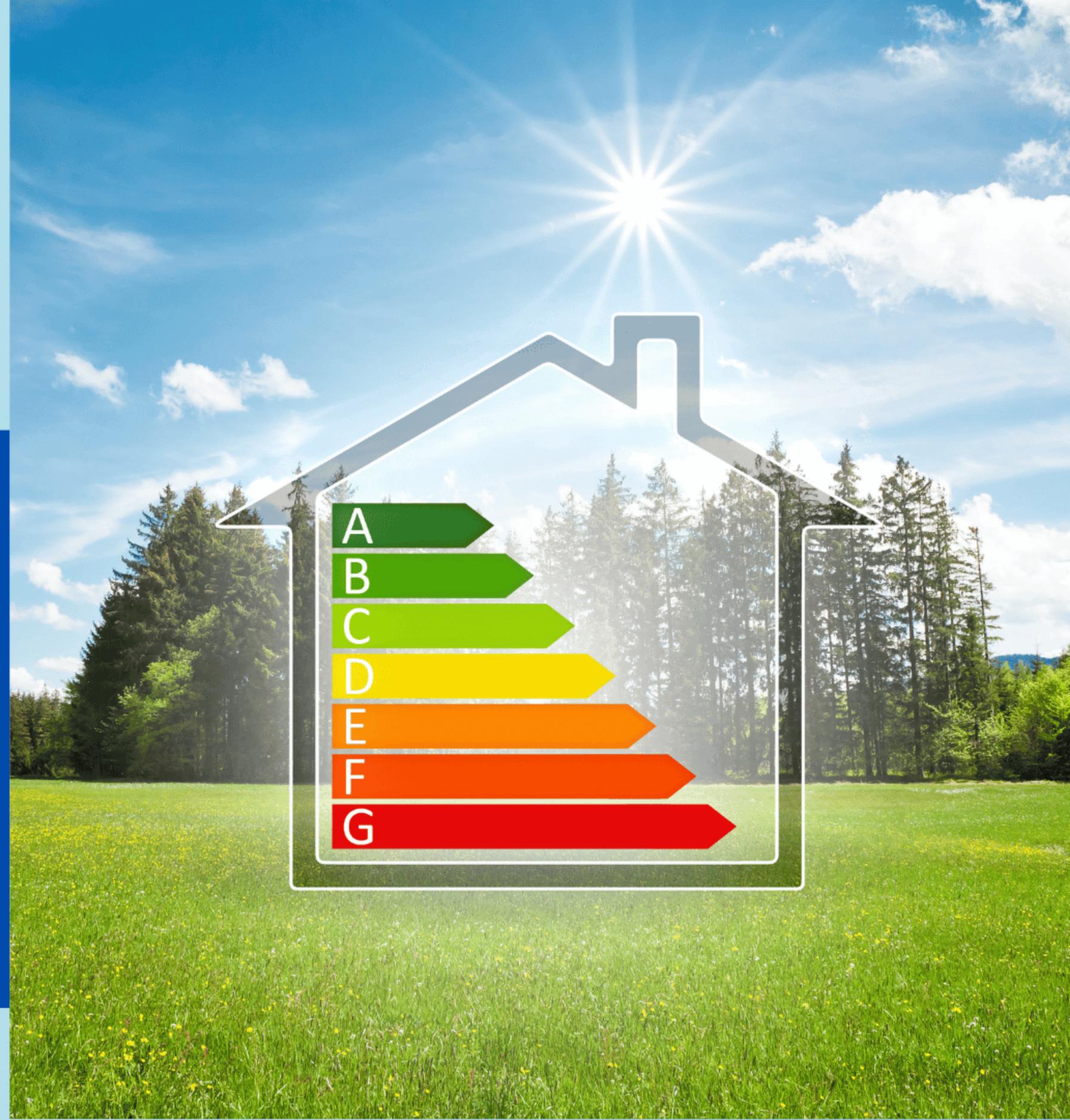
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