

Sustainable Building Program Course Outline



By the end of this training program, participants should be able to:

- Identify and discuss the key practices of sustainable building
- Apply LEED, Built Green and other relevant criteria or established guidelines
- Analyze the costs and benefits of incorporating sustainable building measures
- Work with architects, designers, builders, building operators, and utilities to improve a building's performance

Unit 1: Fundamentals of Sustainable Building and Design

- The "case" or rationale for green building
- A view of the current state of green building in the region and nationally
- The principles of sustainable design
- An introduction to the practicum project

Unit 2: The Importance of Place: Site, Transportation and Land Use Issues

- An introduction to sustainable site design
- An understanding of the site planning process
- Sustainable site analysis and conduct a site assessment
- Importance of transportation planning, siting, relationship to sustainability
- Strategies to achieve sustainable transportation patterns and site development

Unit 3: Energy Efficient Design

- How the design of building energy systems impacts the human experience and the global environment
- The value of contextual, holistic approach to building energy system design
- How a building dynamically interacts with its occupants and the local climate, including renewable energy flows
- Fundamental building energy systems, including HVAC and lighting

Unit 4: "Green" Materials Selection

- Factors in material selection and the issue of trade-offs
- Resources to assist in determining materials appropriateness
- Analytical process to evaluate materials for a project
- Material considerations when using the LEED rating program
- Material considerations when designing a green home

Unit 5: Indoor Environmental Quality & Health

- Benefits of improving indoor environmental quality
- Common indoor air pollutants
- Barriers and solutions to achieving good indoor air
- Implementation issues to help achieve good quality indoor air
- Ventilation system design strategies
- Linkages between health, well-being and productivity
- Physical, psychological and financial benefits of daylight and view

Unit 6: Water and Site Design

- Benefits of adopting a natural systems-based approach
- Sustainable site development patterns
- Impact reduction through landscape layout, plant selection and placement
- Outdoor water conservation strategies and practices
- On-site management methods for storm water and wastewater
- Indoor water conservation

Unit 7: Sustainable Job Site Operations

- Construction waste management, site protection and IAQ protection
- Incorporating green building materials
- Planning and practices for sustainable construction

Unit 8: Building Operations and Maintenance

- Facility management (FM) functions, duties of FM department, FM professionals, and FM position in sustainability
- Building Commission (Cx), what it is, how it is accomplished, and its critical importance to the performance of a building
- Effective operations and maintenance
- Effective training programs within a building

Presentation of Team Projects