

Energy Audit Conservation and Management

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Course: Energy Audit Conservation and Management

Topic: Heating of Buildings

Semester: VIII

Academic Year: 2021-22

Teaching Methodology: Quiz

About the Course: This course is specially designed for VIII Semester students. This will give the students to explain energy conservation in HVAC systems. They will get to know about the concepts of heat transfer. They will eventually gain the knowledge on Space heating methods.



Fig. 1 Conducting Quiz



Fig. 2 Active participation of students in the Quiz

Innovative Teaching Methodology: Quiz

Teachers conduct quizzes to review the lesson. Quizzes can help the students practice their existing knowledge while piquing their interest in understanding a different topic.

About the Topic:

Building heating systems are used for increasing the temperature of a space in buildings or industrial processes. A heating process is primarily achieved by

- free convection (electric heaters, radiator, etc.),
- forced convection (fan coils, forced air over a heat exchanger in furnace, etc.),
- radiation heat transfer (radiators, electric radiative heaters, etc.).

In heating systems, heat is generated by converting an energy source into heat or using a fuel. Heat is used for increasing temperature of air to be blown to the space or a heat transfer fluid to be pumped to a heat exchanger placed in the space.

When the building needs are considered, heating systems are used for controlling the indoor temperature in cold weather conditions. According to the weather conditions, development level of the countries, and fuel types that countries have, the heat generation method and fuels vary. Today, although natural gas and electricity are used as source for heating purposes in the developed countries, coal, wood, and other biomass-based fuels are still used in undeveloped and developing countries. In design of the heating systems, the peak heating load of the building is determined by calculating heat loss from the building.

Course Outcomes:

Student will be able to:

- Understand the need for heating of buildings.
- Understand the concepts of heat transfer and various cooling techniques.