



# **Sree Narayana Mangalam College Maliankara**

*(Affiliated to Mahatma Gandhi University, Kottayam)*

## **CERTIFICATE COURSESYLLABUS**

### **ENERGY MANAGEMENT & ENERGY AUDITING**

Sree Narayana Mangalam College  
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## Objectives of the Course:

- To provide basic information about energy management.
- To gain practical knowledge about energy management.
- To familiarize the concept of energy auditing through practical sessions

## Course Overview:

- Development of overall knowledge about energy management.
- Development of practical skills in energy auditing.
- To understand new techniques of energy management.

**Duration of the course: 32 Hours (12Hours Theory + 20 Hours Practical)**

### Module 1

#### Basics of Energy Management & Energy Auditing

- Definition & Objectives of Energy Management (Theory: 1 hour)
- Energy Audit: Types And Methodology (Theory: 2 hours)
- Need for Energy Audit (Theory: 1 hour)
- Preliminary Energy Audit Methodology (Theory: 1 hour)
- Detailed Energy Audit Methodology (Theory: 1 hour)

### Module 2

#### Energy management (audit) approach

- Ten Steps Methodology for Detailed Energy Audit (Theory: 1 hour)
- **Phase I -Pre Audit Phase Activities** (Practical: 2hours)
- Initial Site Visit and Preparation Required for Detailed Auditing
- The main aims of site visit
- **Phase II- Detailed Energy Audit Activities** (Practical: 12 hours)
- The information to be collected during the detailed audit
- Identification of Energy Conservation Opportunities
- Energy Audit Reporting Format
- Understanding Energy Costs
- Benchmarking and Energy Performance

### Module 3

#### Matching energy use to requirement & Maximizing system efficiencies

- Plant Energy Performance (Theory: 1 hour)
- Production factor (Theory: 1 hour)
- Reference Year Equivalent Energy Use (Theory: 1 hour)
- Monthly Energy Performance (Practical: 2 hours)
- Matching Energy Usage to Requirement (Theory: 2 hour)
- Maximizing System Efficiency (Practical: 4 hours)
- Energy Audit Instruments (Practical: 2 hours)

### **Suggested Readings**

1. NPC energy audit manual and reports
2. Energy management handbook, John Wiley and Sons - Wayne C. Turner
3. Guide to Energy Management, Cape Hart, Turner and Kennedy
4. Cleaner Production – Energy Efficiency Manual for GERIAP, UNEP, Bangkok prepared by National Productivity Council
5. [www.eeca.govt.nz](http://www.eeca.govt.nz)
6. [www.energyusernews.com/](http://www.energyusernews.com/)