

# MANAGEMENT ENGINEERING (LM54)

(Lecce - Università degli Studi)

## Teaching ENERGY MANAGEMENT

GenCod A004627

**Owner professor** FRANCESCO MICALI

**Reference professors for teaching**  
GIOVANNI MANENTE, FRANCESCO MICALI

**Teaching in italian** ENERGY MANAGEMENT

**Teaching** ENERGY MANAGEMENT

**SSD code** ING-IND/09

**Reference course** MANAGEMENT ENGINEERING

**Course type** Laurea Magistrale

**Credits** 9.0

**Teaching hours** Front activity hours: 81.0

**For enrolled in** 2022/2023

**Taught in** 2022/2023

**Course year** 1

**Language** ENGLISH

**Curriculum** Percorso comune

**Location** Lecce

**Semester** First Semester

**Exam type** Oral

**Assessment** Final grade

## BRIEF COURSE DESCRIPTION

Energy Audit of complex building, industrial process and Transportation.  
Measurement & Verification (M&V) methodology and instrumentation  
Tools for measuring electrical consumption by Arduino acquisition system.  
Thermodynamics applied to the heating systems of complex buildings  
The daily solar radiation and valorisation of the solar power by photovoltaic and thermal systems  
Energy production from solar thermal and photovoltaic systems  
Economic analysis of energy efficiency solutions

## REQUIREMENTS

knowledge in :Thermodynamics - Heat Transfer in Industrial systems - Heat Pumps and Chiller - Electrical systems

## COURSE AIMS

Common theme is the endorsement of the energy savings performance contracting (ESPC) delivery method, whereby a third party provides implementation services in ex-change for payment via energy savings. In addition to these regulations, many countries have signed executive orders that furthered energy management as good government business practices; however, only the current ones are relevant. Other federal government activities provide valuable support to the private sector for energy conservation. A few examples show how these efforts are enablers to the energy management industry.

The aim of the course is to make student learning how execute a proper energy audit of complex systems acquiring data, analysing them , propose efficient technological solutions, make a proper economical analyses and business plan on the list of opportunities proposed.

## TEACHING METHODOLOGY

Slide and Exercises

## ASSESSMENT TYPE

Project and Oral

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REFERENCE TEXT BOOKS

Energy Management Handbook (Ninth Edition) - Editors  
Stephen A. Roosa - Steve Doty - Wayne C. turner

Termodinamica e trasmissione del calore - Yunus A. Cengel - Editore McGraw-Hill