UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Energy efficiency: consumption and possible savings

2425-BbetweenSDG-05-04

Module description

The module intends to quantitatively analyze energy consumption in the main sectors and to present possible energy saving and efficiency techniques. In particular, energy consumptions will be presented, divided on the bases of end use (residential, transport, food, consumer goods, services, etc.) at a global and European level. Starting from simple concrete examples, the average per person consumption for the most common human activities will be quantified, with the aim of highlighting where it is possible to implement behavior and strategies that make it possible to obtain significant energy savings. The new technologies available and those traditionally used to meet energy demand will also be compared in terms of efficiency. Finally, a lesson will be dedicated to the presentation of the case study of the UniMiB campus, as a possible place for the implementation of these strategies.

Learning goals

General goal

Educate to greater awareness of energy consumption resulting from the main human activities, and develop proactive thinking in the direction of minimising them for more sustainable cities and communities.

Acquisition of transversal skills related to sustainability such as: adopting measures to reduce pollution and to reduce the negative repercussions of consumption, involving others in environmentally friendly behaviour, assessing the environmental impact of personal behaviour, promoting sustainability.

Acquisition of specific skills related to sustainability such as: conducting studies, surveys and evaluations, managing information, processing information, calculating and estimating, analyzing and evaluating information and data.

Acquisition of soft skills/competences in other domains: working with numbers and measures, processing information, ideas and concepts, handling problems, thinking creatively and innovatively, applying environmental skills and competences, applying civic skills and competences, applying knowledge in the fields of science, technology and engineering.

Specific skills and competences

Sustainable Development Goals of the 2030 UN Agenda

Goal 12: Responsible consumption and production

Breakdown of meetings

6 meetings of 2 hours each. A first part will be dedicated to the presentation of energy consumption, a second one to the presentation of some efficiency techniques, and a final lesson will be devoted to the case study of the UniMiB campus.

Number of participants

There is no maximum limit to the number of participants.

Language used in meetings

Italian

Delivery period of the module

May-July 2023

Methods of assessing the outcomes of the learning process

Closed question test.

Department of affiliation of the teacher

Department of Physics and Department of Materials Sciences

Sustainable Development Goals

RESPONSIBLE CONSUMPTION AND PRODUCTION