



Energy efficiency services for industry

Engineering Programs Supporting Energy Efficiency

During the visit, university leaders presented the portfolio of engineering programs that play a significant role in enhancing industrial sustainability. **27 August 2024**

These include:

- **Smart Cities Planning and Construction**
Focuses on smart infrastructure, low-energy building design, and sustainable urban systems.
- **Materials Engineering and Manufacturing Management**
Equips students with skills to develop green materials, improve manufacturing efficiency, and reduce energy-intensive production.
- **Computer Engineering (Cloud Computing, High-Performance Computing, Cybersecurity)**
Provides advanced computational tools that support industrial process optimization, digital automation, and secure energy-efficient systems.

These programs collectively pave the way for graduates capable of providing professional energy-efficiency services to industry and leading innovation in low-carbon industrial solutions.





Sustainability-Related Courses

To enhance the impact of these programs, the university integrates sustainability across its curriculum through a set of specialized courses directly linked to energy efficiency:

- **Sustainable Materials and Green Manufacturing**
Covers low-energy material development and waste-reducing production methods.
- **Energy Management in Industrial Systems**
Focuses on analyzing and optimizing energy use in factories and industrial facilities.
- **Smart Cities and Sustainable Urban Technologies**
Addresses smart mobility, IoT-enabled energy optimization, and resource-efficient infrastructure.
- **Renewable Energy Technologies**
Provides knowledge on solar, wind, and clean-energy applications in industrial operations.
- **High-Performance Computing for Industrial Optimization**
Enables modeling and simulation of energy-intensive processes to reduce consumption.
- **Cybersecurity for Smart and Energy Systems**
Ensures the protection of digital industrial infrastructure linked to energy management.

These courses ensure that graduates possess both theoretical foundations and practical skills required to advance industrial energy efficiency and support green industrial development.

Our University Roadmap and Future Plans

Menoufia National University has adopted a strategic plan to expand its contribution to energy-efficient industrial development, focusing on:



- Enhancing collaborations with industrial partners to provide consultancy and technical solutions for energy optimization
- Expanding research projects related to clean energy, green manufacturing, and smart industrial systems
- Increasing the number of sustainability-oriented courses across engineering programs
- Establishing specialized labs for industrial energy auditing, smart manufacturing, and material innovation
- Strengthening community outreach and training programs to raise awareness of industrial energy efficiency

Through these efforts, the university aims to serve as a key provider of **Energy Efficiency Services for Industry**, supporting national strategies for sustainability and contributing to SDG 7, SDG 9, SDG 11, and SDG 13.