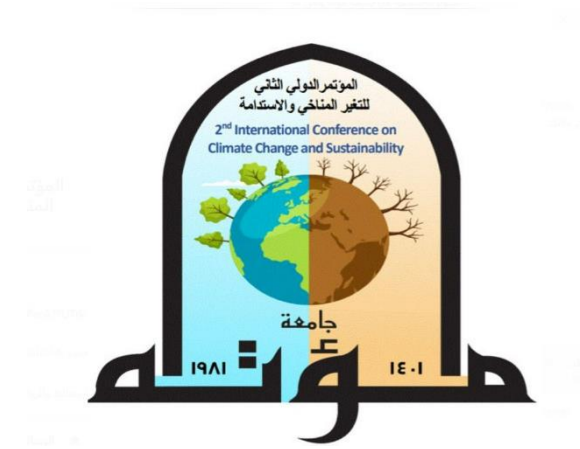


Carbon management and reducing carbon dioxide emissions



Revised March, 2022
 Mutah University
 Maintenance and sustainable unit



Maintenance and sustainable unit

In 1993, the Maintenance and Sustainability Unit was established, comprising several specialized departments:

- Maintenance Department:

Responsible for daily and periodic maintenance of all university facilities, both internal and external dormitories.

Manages tasks including painting, carpentry, aluminum work, general maintenance, sanitation, and various construction projects.

- Mechanical Department:

Maintains and operates central heating systems and wastewater treatment facilities, focusing on recycling water for irrigation and supporting various devices and equipment.

- Electric Department:

Maintains, operates, and manages the electrical systems, including power generation stations and networks.

Manages audio systems and maintains electronic devices in the university's civil and military wings.

- Follow-up and Field Control Department:

Oversees and monitors the university's facilities, conducting inspections and reporting any issues within or outside buildings.

Tracks maintenance requests and ensures unit departments have necessary supplies, spare parts, and equipment.

- Communications Department:

Provides telecommunications services and maintains all university communication exchanges.

- Buildings Department:

Ensures the safety and efficiency of university buildings by monitoring various systems, such as heating, cooling, lighting, and public safety.

Initiates efforts to transition towards energy-efficient buildings by implementing insulation systems, installing energy-saving double-glazed windows, replacing traditional lighting with LED systems, and utilizing modern air circulation systems for more efficient heating and cooling.

The Maintenance and Sustainability Unit plays a crucial role in the maintenance and sustainability of the university's facilities and buildings, infrastructure development, and the operation of electrical, mechanical, health, and communications systems. Their responsibilities extend to providing maintenance services year-round, even on public holidays, and offering maintenance support to the local community in the Karak governorate.



The Maintenance and Sustainable Unit, through the Follow-up and field control department, continuously reviews all sources of waste emissions at the university campus to ensure that all university emission sources are within the international conditions and the Jordanian specifications and standards in cooperation with the Ministry of Environment. In addition to the continuous follow-up and taking readings, the university has adopted a plan to transform all emission sources from the university facilities to zero or low-emission sources. Examples of the action taken:

- ✓ *The actual need for electrical energy at Mutah University is secured through the university's photovoltaic system, with 5 megawatts installed inside the university campus.*
- ✓ *The university adopted a plan to convert all facilities that need energy to use natural gas and electricity, which is environmentally friendly and has low emissions.*
- ✓ *All university vehicle moves are managed to lower gasoline consumption. The university's strategy is to convert University cars into either hybrid or electric vehicles.*
- ✓ *The university adopted a plan to recycle and benefit from waste to reduce harmful emissions. The university also used the best international standards for waste separation and sorting.*
- ✓ *The university has adopted an afforestation project and increased green spaces since 2018. This plan aims to plant the entire unused university lands at a rate of up to 100% by 2025.*
- ✓ *Through the maintenance and sustainable unit, the university closely monitors all university facilities and takes periodic readings to achieve the most significant reduction in harmful emissions.*

Table 1 Diesel consumption and yearly reduction to lower CO₂ emission and implement eco-friendly practices.

	2021			2022			Reduction 2021 (%)
	Diesel amount (L)	CO ₂ (Ton)	Energy content (GJ)	Diesel amount (L)	CO ₂ (Ton)	Energy content (GJ)	
Presidency Buildings	1352	3.6	52	1297	3.5	52	4
Engineering Faculty	23456	62.9	906	19876	53.3	906	18
Science Faculty	7635	20.5	295	7342	19.7	295	4
Nursing Faculty	5432	14.6	210	4987	13.4	210	9
Art Faculty	4556	12.2	176	3987	10.7	176	14
Business Faculty	3873	10.4	150	3412	9.1	150	14
Law Faculty	4563	12.2	176	3764	10.1	176	21
Social Faculty	3987	10.7	154	2456	6.6	154	62
Sharia Faculty	2563	6.9	99	2789	7.5	99	-8
Educational Science Faculty	2897	7.8	112	3456	9.3	112	-16
Sports Science Faculty	35876	96.1	1386	25671	68.8	1386	40
Medicine Faculty	17865	47.9	690	13459	36.1	690	33
Pharmacy Faculty	7234	19.4	280	5671	15.2	280	28
Information Technology Faculty	6341	17.0	245	6231	16.7	245	2
Agriculture Faculty	16742	44.9	647	16543	44.3	647	1
Teaching Halls Complex	55642	149.1	2150	53876	144.4	2150	3
service buildings	27890	74.7	1078	27890	74.7	1078	0
Average Reduction (%), 2022							13

Mutah University has actively pursued a transition from being an energy-consuming institution to becoming an energy-producing and environmentally sustainable university. This ambitious journey to transform the university campus into an energy-efficient, eco-friendly space commenced in 2018 and continues to this day.