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## Camera Division

The CCTV system at Al-Ma'moun University is an essential part of university security and discipline management. Assigning its responsibility to the Information Technology Department requires an engineering approach that ensures uninterrupted broadcasting and recording.

Here is the proposed professional maintenance plan:

First: System Technical Structure (Components)

Before commencing maintenance, the department must have a layout of the equipment, according to the following distribution:

External Cameras (PTZ & Bullet): For monitoring fences, gates, and parking areas.

Internal Cameras (Dome): Distributed throughout classrooms, laboratories, and corridors.

Recording Devices (NVR/Server): With high storage capacity.

Control Room: Large display screens and control devices.

Second: Camera Maintenance Workflow Diagram

The following diagram illustrates the maintenance cycle from inspection to repair:

Third: Periodic maintenance schedule

Maintenance Type	Required Action	Frequency
Lens Maintenance	Clean camera lenses with special materials to prevent image blurring (especially for external lenses).	Monthly
Connection Integrity	Check network cables (CAT6) and RJ45 connectors to ensure they are free of oxidation.	Every 3 months
Storage System	Ensure that hard drives are recording correctly and that there are no "bad sectors".	Weekly

Angles and Focus	Adjust camera angles that may have shifted due to wind or tampering.	Every 2 months
UPS Maintenance	Check backup batteries to ensure cameras operate during power outages.	Every 3 months

#### Fourth: Smart Maintenance Procedures (Software)

Since the department is "Information Technology," professional software features must be activated:

Video Loss Alarm: Configure the system to send an email or alert immediately upon any camera malfunction.

Firmware Update: Update camera software to patch security vulnerabilities and improve image quality.

Storage Review: Ensure the system retains recordings for a minimum of 30 days, as per university policy.

#### Fifth: Maintenance Team Toolkit

The IT team at Al-Ma'moun University should have a maintenance kit containing:

IP Camera Tester: A portable camera testing device for directly testing the camera's image.

Optical Cleaners: Spray.

Telescopic Ladder: For safe access to high-rise cameras.

Blower: For blowing dust off NVRs and their associated fans.

#### Sixth: Annual Status Report

At the end of each academic year, the department submits a report detailing:

Validity Rate: (e.g., 95% of cameras are functioning properly).

Proposed Upgrade: Replace older cameras with cameras that support facial recognition in sensitive areas.