

MODULE	REASON FOR THE MODULE	KEY LEARNING AREAS	LEARNING OUTCOMES
1. Electrical Systems Maintenance	As data centers evolve, advanced electrical maintenance is crucial for efficiency, reliability, and safety.	<ul style="list-style-type: none"> - Power Quality Challenges - Backup Power Systems - Energy Monitoring - Sustainability - Maintenance SOPs - Generator Procedures 	Implement safe and effective electrical maintenance, improve system reliability, and integrate sustainability initiatives.
2. UPS Systems in Data Centers	Modern UPS systems are evolving to meet AI demands and modular designs, requiring deeper understanding.	<ul style="list-style-type: none"> - Modular UPS - AI Integration - UPS Batteries - DCIM Compatibility - European Case Study 	Deploy advanced UPS systems with improved energy efficiency and prepare for future AI power needs.
3. Standby Generators	Standby generator systems must be designed and calculated with precision to meet mission-critical demands.	<ul style="list-style-type: none"> - Load & Power Calculations - Fuel Design - Hybrid Systems - Deployment Case Studies 	Design and manage standby systems including hybrid power and advanced fuel strategies with real-world examples.
4. Maintenance Management	Effective management ensures long-term performance and cost-efficiency in high-density environments.	<ul style="list-style-type: none"> - Maintenance Costs - Automation Tools - TCO - Fibre Cable Maintenance - Compliance Documentation 	Develop comprehensive maintenance strategies, manage costs, and improve compliance and documentation systems.
5. Reliability Engineering	Data reliability and observability are essential for resilient, high-performance digital infrastructure.	<ul style="list-style-type: none"> - SLAs - Anomaly Detection - Incident Management - Data Observability - Performance Monitoring 	Establish reliable data systems, integrate observability principles, and enhance pipeline resilience.
6. Static Transfer Switches	Static Transfer Switches (STS) ensure seamless power transitions in critical operations.	<ul style="list-style-type: none"> - STS Design - ATS Role - Noise Pollution Impact - STS Selection Criteria 	Understand STS and ATS applications, assess design impacts, and improve power transfer systems.
7. Air Flow Management	Advanced airflow design improves energy savings and system cooling, key in scaling data centers.	<ul style="list-style-type: none"> - HVAC Design - Energy Efficiency - Airflow Systems - Sustainability Best Practices 	Apply airflow and HVAC best practices for sustainability and cooling optimization in advanced environments.
8. Data Centre Power Quality	High-quality power is fundamental for reliability and uptime in sophisticated infrastructure.	<ul style="list-style-type: none"> - Power Factor Corrections - Voltage Regulation - Power Conditioning Techniques 	Diagnose and improve power quality using advanced tools and strategies tailored to high-demand systems.
9. Data Centre Safety	Safety, health, and environmental factors must evolve with data center technological advancements.	<ul style="list-style-type: none"> - SHE Overview - AI Monitoring - Case Studies (Hamina, Digital Edge) - Mitigation Techniques 	Integrate predictive monitoring and global case learnings into safety planning and compliance programs.
10. Data Centers Procedures Development	Documented and scalable SOPs ensure reliability and safety during complex operations.	<ul style="list-style-type: none"> - Procedure Frameworks - Change Management - Digital Documentation - Approval Workflows 	Develop structured operational procedures aligned with safety, scalability, and change control.
11. Data Centers Control Systems	Advanced control systems improve automation, efficiency, and oversight across modern facilities.	<ul style="list-style-type: none"> - Integrated Control Systems - IoT Monitoring - HVAC & Power Control - Security System Automation 	Design and manage intelligent control systems that optimize operations and facility responsiveness.
12. Data Center Power Efficiency	Improving energy efficiency at scale reduces costs and environmental impact.	<ul style="list-style-type: none"> - PUE Optimization - Load Balancing - Green Energy Integration - Monitoring Tools 	Plan and implement systems that maximize energy efficiency and lower carbon footprint.
13. Data Center Critical Spares	Spares management must evolve for large-scale, distributed infrastructure systems.	<ul style="list-style-type: none"> - Predictive Spare Management - Inventory Automation - Lifecycle Tracking - Vendor SLAs 	Build advanced spare parts systems to ensure minimal downtime and predictive readiness.