

NORTHERN TECHNICAL UNIVERSITY
Mosul Polytechnic College — Department of Electrical Technologies
Curriculum & Schedule of Scientific Activities for the Year 2025

1. ENVIRONMENTALLY POLLUTING EMISSIONS ACTIVITIES (2025)

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
1	Electrical Technologies	Symposium	Pollution, Global Warming, and Reduction Methods	1 Day	16 / 01 / 2025	Laith Abduljabbar Hamdi	Electrical Tech. Dept.	Examines environmental hazards of increasing pollution and atmospheric global warming affecting living organisms, with strategies to mitigate global warming impacts.
2	Electrical Technologies	Symposium	Climate Change Concepts, Causes, Impacts on Environment, Health Risks, and Response Strategies	1 Day	24 / 05 / 2025	Dr. Raghad Ghalib Saadallah	Electrical Tech. Dept.	Covers climate change definitions, causes, environmental impacts, health hazards, and actionable mitigation methods.

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2. SECURITY AWARENESS DEVELOPMENT ACTIVITIES (2025)

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
1	Electrical Technologies	Workshop	Electronic Extortion: Digital Threats and Effective Protection Methods	3 Days	11 - 13 / 05 / 2025	Dawood Salim Muhammad	Electrical Tech. Dept.	Explores cyber blackmail, digital threat vectors, and societal impacts with countermeasures.
2	Electrical Technologies	Workshop	Digital Threats and Effective Protection Techniques	3 Days	06 - 08 / 10 / 2025	Dr. Raghad Ghalib Saadallah	Electrical Tech. Dept.	Key cybersecurity protocols for safeguarding systems against cyberattacks, breaches, and digital threats.
3	Electrical Technologies	Symposium	Substance Abuse and Its Negative Impacts on Social Development and Generational Stability	1 Day	25 / 11 / 2025	Yasser Khalaf Hassan	Electrical Tech. Dept.	Analyzes the side effects of narcotics on social stability, generational development, and community security.
4	Electrical Technologies	Symposium	Fake Web Links: Severe Threats to Information Security and User Privacy	1 Day	30 / 02 / 2025	Laith Abduljabbar Hamdi, Karam Samir Qasim	Electrical Tech. Dept.	Examines phishing links, data privacy breaches, and their technical/security implications for researchers.

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
5	Electrical Technologies	Symposium	Global Methane Emissions in the Oil & Gas Industry and Environmental Impacts	1 Day	15 / 01 / 2025	Zaid Khalaf Muhammad	Electrical Tech. Dept.	Technological controls for oil and gas methane emissions to reduce climate footprint during low-carbon energy transition.

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3. TECHNICAL & ENGINEERING WORKSHOPS (2025)

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
1	Electrical Technologies	Workshop	Batteries Used in Photovoltaic Solar Power Systems	3 Days	03 - 05 / 11 / 2025	Muhammad Bashar	Electrical Tech. Dept.	Covers deep-cycle battery types, characteristics, and components essential for off-grid PV solar energy storage.
2	Electrical Technologies	Workshop	Power Inverters: Types, Properties, and Practical Applications	3 Days	11 - 13 / 02 / 2025	Laith Abduljabbar	Electrical Tech. Dept.	Details power inverter classifications, performance parameters, and operational importance in electrical engineering.
3	Electrical Technologies	Workshop	Optimal Design Fundamentals for Solar PV Systems in Residential and Industrial Applications	3 Days	16 - 18 / 09 / 2025	Dr. Ahmad Attiya Allou	Electrical Tech. Dept.	Mathematical calculations required to size battery banks, solar panels, and inverter capacities for residential PV setups.
4	Electrical Technologies	Workshop	Harmonic Analysis in Inverters and Output Waveform Quality Enhancement Methods	3 Days	15 - 17 / 04 / 2025	Laith Abduljabbar	Electrical Tech. Dept.	Mechanisms for analyzing harmful harmonics, negative wave impacts, and filtering techniques for pure sine wave output.

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
5	Electrical Technologies	Workshop	Types and Structures of Overhead Electrical Transmission Towers	3 Days	16 - 18 / 06 / 2025	Israa Khalooq	Electrical Tech. Dept.	Overview of structural types and sizing of transmission/ distribution towers from generation plants to load centers.
6	Electrical Technologies	Workshop	Internet Addiction and Digital Behavioral Risks	3 Days	11 - 13 / 05 / 2025	Luay Abdulqadir Yahya	Electrical Tech. Dept.	Psychological and social hazards of electronic addiction and cyber exploitation on youth and community.
7	Electrical Technologies	Workshop	555 Timer IC: Principles and Practical Circuit Applications	3 Days	22 - 24 / 04 / 2025	Dawood Salim Muhammad	Electrical Tech. Dept.	Internal architecture and practical industrial/electronic applications of the 555 timer integrated circuit.
8	Electrical Technologies	Workshop	High-Voltage Direct Current (HVDC) Power Transmission	3 Days	24 - 26 / 03 / 2025	Ibrahim Ahmad Muhammad	Electrical Tech. Dept.	HVDC transmission principles to load centers, AC-to-DC rectification, and DC-to-AC conversion topologies.
9	Electrical Technologies	Workshop	Job Interview Strategies: Preparation, Communication, and Impact	3 Days	04 - 06 / 05 / 2025	Dr. Raghad Ghalib Saadallah	Electrical Tech. Dept.	Essential professional career readiness skills: interview prep, verbal/non-verbal communication, and candidate impression.
10	Electrical Technologies	Workshop	Digital Threats and Effective Cybersecurity Safeguards	3 Days	06 - 08 / 10 / 2025	Dr. Raghad Ghalib Saadallah	Electrical Tech. Dept.	Advanced cybersecurity measures against intrusion, malware, and digital threat vectors.

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4. SCIENTIFIC SYMPOSIA & SEMINARS (2025)

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
1	Electrical Technologies	Symposium	Health and Psychological Harms of Excessive Social Media Use and Mitigation Strategies	1 Day	20 / 01 / 2025	Laith Abduljabbar Hamdi	Electrical Tech. Dept.	Health and psychological drawbacks of screen overuse on individuals and families, featuring screen-time balancing techniques.
2	Electrical Technologies	Symposium	Environmental Pollution, Global Warming, and Abatement Methods	1 Day	16 / 01 / 2025	Laith Abduljabbar Hamdi	Electrical Tech. Dept.	Impacts of atmospheric pollutants on global warming and living ecosystems, with actionable environmental policies.
3	Electrical Technologies	Symposium	Electrical Energy Conservation and Demand-Side Management	1 Day	31 / 03 / 2025	Muhammad Bashar	Electrical Tech. Dept.	Energy conservation methodologies and their operational significance for power grid stability and generation stations.
4	Electrical Technologies	Symposium	Alignment Between Private Sector Employment and Social Security: Rights and Obligations	1 Day	20 / 10 / 2025	Dr. Raghad Ghalib Saadallah	Electrical Tech. Dept.	Synergy between private labor market growth and social security benefits, legal obligations, and economic returns.

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
5	Electrical Technologies	Symposium	Narcotics Hazards and Adverse Effects on Social Development and Youth Stability	1 Day	25 / 11 / 2025	Yasser Khalaf Hassan	Electrical Tech. Dept.	Socio-economic side effects of substance abuse and preventive measures for community health.
6	Electrical Technologies	Symposium	Phishing Links on the Web: Critical Threats to Data Security and User Privacy	1 Day	30 / 02 / 2025	Laith Abduljabbar Hamdi, Karam Samir Qasim	Electrical Tech. Dept.	Risks posed by malicious web links to digital assets, personal privacy, and academic research data.
7	Electrical Technologies	Symposium	Global Oil & Gas Industry Methane Emissions and Climate Consequences	1 Day	15 / 01 / 2025	Zaid Khalaf Muhammad	Electrical Tech. Dept.	Engineering controls for controlling petroleum sector methane venting and flaring during sustainable energy transitions.

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5. SCIENTIFIC SEMINARS & STUDY CIRCLES (2025)

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
1	Electrical Technologies	Seminar	Enhancing Energy Sustainability via On-Grid Solar Photovoltaic Systems Integration	1 Day	15 / 01 / 2025	Dr. Ahmad Attiya Allou	Electrical Tech. Dept.	Grid-tied solar PV standards, synchronization requirements, and grid code compliance to bolster renewable energy sustainability.
2	Electrical Technologies	Seminar	Solar Energy System Classifications: Configurations, Operation Principles, Components, and System Selection	1 Day	19 / 03 / 2025	Zaid Khalaf	Electrical Tech. Dept.	Comparative technical evaluation of off-grid, grid-tied, and hybrid solar systems for optimal load matching.
3	Electrical Technologies	Seminar	Mendeley Reference Manager for Scientific Citation and Bibliography Management	1 Day	09 / 04 / 2025	Shamel Khidr Ramadan	Electrical Tech. Dept.	Practical session on utilizing Mendeley software for organizing research references, in-text citations, and bibliography compilation.
4	Electrical Technologies	Seminar	Semiconductor Fabrication Processes and Manufacturing Technologies	1 Day	16 / 04 / 2025	Shamel Khidr Ramadan	Electrical Tech. Dept.	Fundamentals of semiconductor physics, silicon wafer fabrication, doping, photolithography, and microchip assembly.

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6. SCIENTIFIC DEVELOPMENTS & TECHNOLOGICAL INNOVATION (2025)

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
1	Electrical Technologies	Scientific Dev.	Residential Power Consumption Reduction Using Micro-Inverters and PV Panels	1 Day	10 / 04 / 2025	Muhammad Bashar	Electrical Tech. Dept.	Efficiency gains and decentralized advantages of micro-inverter architectures over central string inverters in home solar installations.
2	Electrical Technologies	Scientific Dev.	Maximum Power Point Tracking (MPPT) via Series Resonant DC-DC Converters in Solar Systems	1 Day	10 / 03 / 2025	Dr. Ahmad Attiya Allou	Electrical Tech. Dept.	Resonant converter control topologies for dynamic and highly responsive Maximum Power Point Tracking under variable irradiance.
3	Electrical Technologies	Scientific Dev.	Corona Discharge Phenomenon in High-Voltage Lines and Mitigation Techniques	1 Day	13 / 03 / 2025	Shadha Yousif Ismail	Electrical Tech. Dept.	Physical causes, energy losses, and radio interference resulting from corona discharge in power lines, plus mitigation methods.
4	Electrical Technologies	Scientific Dev.	Analysis of High-Voltage Electrical Power System Insulators: Characteristics and Applications	1 Day	28 / 09 / 2025	Shadha Yousif Ismail	Electrical Tech. Dept.	Material properties, electrical stress resistance, sizing, and application criteria for porcelain, glass, and composite insulators.

#	Department	Type	Activity Title	Duration	Date (D/M/Y)	Lecturer(s)	Location	Brief Overview
5	Electrical Technologies	Scientific Dev.	Nano-Scale Light Emitting Diodes (Nano-LEDs): Characteristics and Emerging Applications	1 Day	15 / 01 / 2025	Zahraa Muhammad Saeed	Electrical Tech. Dept.	Optoelectronic properties, quantum efficiency gains, and advanced industrial/display applications of nano-LED devices.
6	Electrical Technologies	Scientific Dev.	Types and Structural Designs of Overhead Transmission Line Towers	1 Day	20 / 06 / 2025	Israa Khalooq Saeed	Electrical Tech. Dept.	Structural dynamics, height requirements, and engineering purposes of various overhead tower configurations in grid networks.
7	Electrical Technologies	Scientific Dev.	Development of High-Efficiency Renewable Energy Batteries and the Future Power Grid	1 Day	24 / 11 / 2025	Laith Abduljabbar Hamdi	Electrical Tech. Dept.	Next-generation chemical compositions and smart battery management systems (BMS) for grid-scale solar energy storage.