

COURSE OVERVIEW EE0476(KM1)
Remove and Replace Electrical Components

Course Title

Remove and Replace Electrical Components

Course Date/Venue

Session 1: July 13-17, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: December 15-19, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



Course Reference

EE0476(KM1)



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.



This course is designed to equip participants with the essential skills and knowledge required to safely and efficiently remove, replace, and maintain electrical components in oil and gas facilities. Covering a range of critical topics, including electrical safety standards, troubleshooting techniques, and the proper handling of equipment, this course emphasizes hands-on training to ensure participants can confidently work with electrical systems in hazardous environments. Participants will learn to identify faulty components, follow industry-specific protocols, and adhere to regulatory compliance, ensuring minimal downtime and enhanced operational efficiency. Ideal for electricians, technicians, and maintenance personnel, this course combines theoretical insights with practical applications to prepare professionals for the unique challenges of the oil and gas sector.



This course is designed to provide participants with the essential skills and knowledge needed to safely and effectively remove and replace electrical components in an industrial setting. The course covers safety protocols, tools, and techniques specific to the oil and gas sector, emphasizing proper procedures for disconnecting, replacing, and reinstalling electrical components in machinery and equipment. Participants will also learn how to troubleshoot electrical issues, conduct inspections, and ensure that all work complies with industry standards and regulatory requirements, thereby maintaining operational efficiency and safety in critical production environments.

Course Objectives

Upon the successful completion of this course, each participant will be able to gain knowledge and experience on how to apply concepts of electrical installations such as operating, maintenance & spare part manuals in a manner that follows international best practice and be aware of the kind of tools appropriate for the task. The participants will gain a working knowledge on the subject matter and reference documentation. Further, each participant will be able to:-

- Apply and gain an in-depth knowledge on electrical installation diagrams, electrical components and operating manuals
- Employ the international best practices and identify the kind of tools appropriate for the operation
- Enumerate the paths of energy, constituents of a network voltage levels, pricing policy of the electricity board and electrical switchgear
- Discuss the basic formulate and differentiate between three-phase short circuit currents and two-phase short circuit currents
- Identify switchgear, symbols protection rating enclosures and power distribution in the public domain
- Discuss distribution diagrams and connection to the grid
- Identify the equipment used by the English electricity board, transformer substation, public distribution substation, diagram of a substation and power distribution in a private domain
- Analyze distribution diagram, constitution of substations and list the types of fault & protective devices for fixed equipment
- Discuss assembled substations and list the types of fault & protective devices for withdraw able equipment
- Distinguish the difference between oil-filled transformers and dry-type transformers
- Discuss supplementary equipment, generator set and capacitors

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course is intended for electrical technicians.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.


Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology’s courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant’s involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant’s CEU and PDH Transcript of Records upon request.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.



This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Ahmed Hayajneh is a **Senior Electrical Engineer** with **20 years** of experience in **Oil, Gas, Petrochemical, Refinery & Power** industries. His expertise widely covers in the areas of **HV/MV Cable Splicing, Jointing, Inspection & Termination, HV/LV Equipment, High Voltage Electrical Safety, LV & HV Electrical System, HV Equipment Inspection & Maintenance, HV Switchgear Operation & Maintenance, LV Distribution Switchgear & Equipment, LV/MV Electrical Safety (11 KV, 415 & 220 Voltage), Power System Equipment, Power Cable Standard and Testing, Cables & Wiring, Overhead Transmission Lines, Transmission Network Maintenance, Electrical Forecasting Techniques, Inspection Reporting Techniques, Electrical Substation Design & Planning, Electrical Drawings & Schematics, Fault Detection Analysis, Distribution Networks & Load Forecasting, Power Generation, Electrical Power System, Electrical Installations & Utilities, Electrical Distribution Systems & Control Circuits, Electrical Drawings, Relay Logic Circuits, Troubleshooting Transformers, System Grounding, Circuit Breakers, Protection Devices & Technology, Protection Relay, Transformers, Generators, Power Transformers, Motors, Substations, Switchgears & Distribution, Power System Analysis, Electrical Equipment Control Systems, Transformer Maintenance & Testing, Electrical Substation & Design, Power Quality Studies & Load Criteria, Substation Earthing System, Electrical Equipment Maintenance, Electrical Safety, Electrical Protection, Batteries, Chargers & UPS, Electrical Submersible Pumps (ESP), Power Supply Substations, Area Classification, Safety Management System, Permit to Work & Issuing Authority, Emergency Diesel Generator, Variable Frequency Drives (VFD), PLC & SCADA for Automation & Process Control, Automation Solutions & Techniques, Automating Process Equipment, DCS Automated Process Control Systems, High & Low Voltage Electrical Safety, Electrical Inspection & Testing, Electrical Control & Monitoring System, Electric Power System, Intensive Overhead Transmission Line (OHTL), Generator Maintenance & Troubleshooting, Transmission Line Networks, Distribution Engineering, HVDC Transmission & Control, Substation Maintenance Techniques and Overhead Power Line Construction & Patrolling.**

Mr. Ahmed gained his expertise and experience through several positions as a **Senior Electrical Project Engineer, Senior Electrical Engineer, Site Electrical Engineer** and **Senior Instructor/Trainer** for various companies such as United Electro-Mechanical International Company, AL OSAIS Contracting Co., ASTRACO, Saudi Service for Electro Mechanic Work Co. (S.S.E.M), Dubai Electricity & Water Authority (DEWA) and Saudi Electricity Company (SEC).

Mr. Ahmed has a **Bachelor's** degree in **Electrical Engineering**. Further, he is a **Certified Instructor/Trainer** and has delivered various trainings, seminars, conferences, workshops and courses globally.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	The Electrical Network <i>Paths of Energy</i>
0930 – 0945	<i>Break</i>
0945 – 1100	The Electrical Network (cont'd) <i>Constituents of a Network Voltage Levels</i>
1100 – 1215	The Electrical Network (cont'd) <i>Pricing Policy of the Electricity Board</i>
1215 – 1230	<i>Break</i>
1230 - 1430	The Electrical Network (cont'd) <i>Pricing Policy of the Electricity Board (cont'd)</i>
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0930	Electricity Switchgear <i>Reminder of the Basic Formulate</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Electricity Switchgear (cont'd) <i>Three-Phase Short Circuit Current • Two-Phase Short Circuit Currents</i>
1100 – 1215	Electricity Switchgear (cont'd) <i>Definition of the Switchgear</i>
1215 – 1230	<i>Break</i>
1230 – 1430	Electricity Switchgear (cont'd) <i>Symbols Protection Rating Enclosures</i>
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0930	Power Distribution in the Public Domain <i>Distribution Diagrams • Connection to the Grid</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Power Distribution in the Public Domain (cont'd) <i>Equipment Used by the English Electricity Board</i>
1100 – 1215	Power Distribution in the Public Domain (cont'd) <i>Transformer Substation</i>
1215 – 1230	<i>Break</i>
1230 – 1430	Power Distribution in the Public Domain (cont'd) <i>Public Distribution Substation • Diagram of a Substation</i>
1430	<i>Lunch & End of Day Two</i>

Day 4

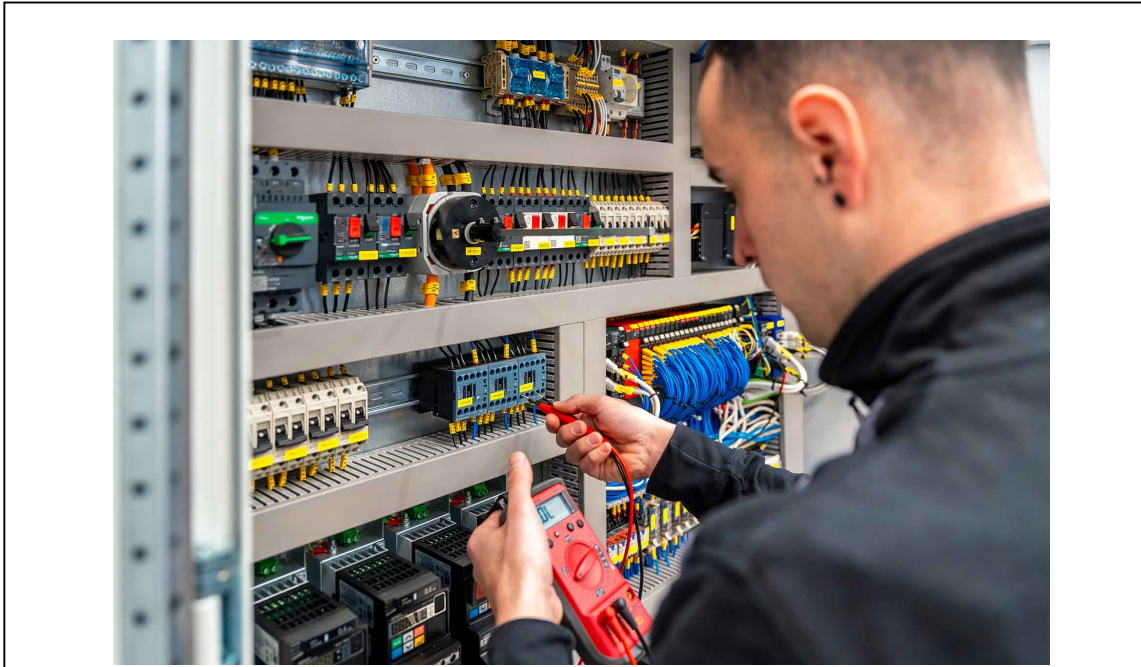
0730 – 0930	Power Distribution in a Private Domain <i>Distribution Diagram • Constitution of Substation • Fixed Equipment</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Power Distribution in a Private Domain (cont'd) <i>Types of Fault and Protective Devices • Factory Assembled Substation</i>
1100 – 1215	Power Distribution in a Private Domain (cont'd) <i>Withdraw Able Equipment • Types of Fault and Protective Devices</i>
1215 – 1230	<i>Break</i>
1230 – 1430	Power Distribution in a Private Domain (cont'd) <i>Transformers (Oil-Filled & Dry-Type) • Supplementary Equipment</i>
1430	<i>Lunch & End of Day Three</i>

Day 5

0730 – 0930	Power Distribution in a Private Domain (cont'd) <i>Generator Sets • Capacitor</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Power Distribution in a Private Domain (cont'd) <i>Protection System • Instrument Transformers</i>
1100 – 1230	Power Distribution in a Private Domain (cont'd) <i>Protection Plan • Operating</i>
1230 – 1245	<i>Break</i>
1245 – 1345	Power Distribution in a Private Domain (cont'd) <i>Maintenance Manuals • Spare Parts Catalogues</i>
1345 – 1400	POST-TEST
1400 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

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