

COURSE OVERVIEW EE0041
Power System Communications

Course Title

Power System Communications

Course Date/Venue

Session 1: May 25-29, 2025/Boardroom 1,
 Elite Byblos Hotel Al Barsha,
 Sheikh Zayed Road, Dubai, UAE
 Session 2: November 03-07, 2025/Fujairah
 Meeting Room, Grand Millennium
 Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

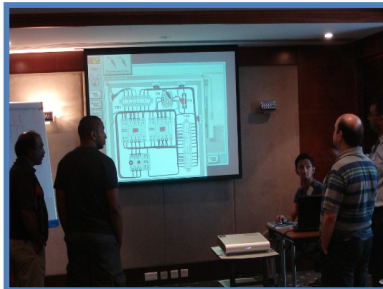
EE0041



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.



The course is designed to provide delegates with detailed and up-to-date overview and practical approach on the troubleshooting, maintenance, testing, inspection and risk assessment of electrical power system.



The course covers the direct current test of insulators along with AC voltage testing including the results of the test as well as the precautions when performing DC and AC test, test connections for power factor testing, insulating oils, fluids and gases.

Maintenance and reconditioning of insulating oil, gases, transformers, cables, MV switchgear, protective relay, motors and generators and the switching practices and precautions including effects of electrical shock and first aid will also be discussed during the course.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on electrical maintenance, inspection, testing and risk assessment
- Employ direct current test of insulators along with AC voltage testing and evaluate the results of these test
- Carryout precautions when performing DC and AC test
- Discuss test connections for power factor testing, insulating oils, fluids and gases
- Analyze the maintenance and reconditioning of insulating oil, gases, transformers, cables, MV switchgear, protective relay, motors and generators
- Demonstrate switching practices and precautions including effects of electrical shock and first aid

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 provides an overview of all significant aspects and considerations of electrical maintenance, inspection, testing and risk assessment for electrical engineers, supervisors and other technical staff.

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:

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos


In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course 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.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Instructor(s)

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. Ken Steel is a Senior Electrical, Instrumentation & Energy Engineer with over 45 years of extensive experience within the Oil, Gas, Petrochemical, Refinery, Energy & Power industries. His expertise widely covers in the areas of Renewable Energy & Smart Grid Systems, Renewable Energy Systems, Renewable Energy Sources Integration, Energy Systems Integration, Electrical Power Generation & Distribution, Sustainable Energy Solutions, Electrical Systems Maintenance, Conventional Energy Grids & Power Systems, Smart Grid Technologies, Advanced Electrical Infrastructure Installation & Maintenance, Efficient Energy Distribution & Real-Time Monitoring, Energy Efficiency & Grid Integration, Electrical Motors Testing, HV/MV Cable Splicing, Cable Splicing & Termination, HV/MV Switchgear, Circuit Breaker Inspection & Repair, High Voltage Power System, HV Equipment Inspection & Maintenance, HV Switchgear Operation & Maintenance, Heat Shrink & Cold Shrink Joints, Diesel Power Plant Installation, Transformer & Diesel Generators, Protection Relay, NEC (National Electrical Code), NESC (National Electrical Safety Code), Electrical Safety, Electrical Hazards Assessment, Electrical Equipment, Personal Protective Equipment, Lock-Out & Tag-Out (LOTO), Confined Workspaces, Power Quality, Power Network, Power Distribution, Substations, UPS & Battery System, Earthing & Grounding and Power Generation.

During Mr. Steel's career life, he has gained his practical experience through several significant positions and dedication as the **Commissioning Support Engineer, Site Execution Superintendent, Grid Integration Engineer, E&I Construction Superintendent, High Voltage Construction Supervisor, Control & Power Construction Supervisor, Electrical & Instrumentation Supervisor, Construction Support Electrical Engineer, E&I Engineer, Electrical/Instrumentation Site Supervisor, Q.A/Q.C Inspector, Renewable Energy Systems Analyst, Electrical/Instrumentation Technician, Maintenance Fitter Instrumentation Technician, Electrical Technician, Millwright, Apprentice Millwright and Senior Instructor/Lecturer** for Tengiz Chevron Oil Kazakhstan, Juwi Renewable Energies (Pty) Ltd, Al Jubail Saudi Arabia, Escravos Delta state Nigeria, Lurgi S.A, SuD Chemie Sasol Catalysts, J C Groenewalds Construction (LTA), Tycon (Goodyear S.A.), Dragline Construction and Iscor Vanderbijlpark.

Mr. Steel has a **Diploma in Electronics Mechanic**. Further, he is a **Certified Instructor/Trainer** and delivered numerous trainings, courses, workshops, seminars and conferences internationally.

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 – 0900	<i>Electrical Equipment, Troubleshooting, Maintenance & Testing</i>
0900 – 0930	<i>Why Maintain and Test?</i>
0930 – 0945	<i>Break</i>
0945 – 1015	<i>Planning an EPM Program</i>
1015 – 1130	<i>Testing Methods</i>
1130 – 1230	<i>Direct Current Test of Insulators</i>
1230 – 1245	<i>Break</i>
1245 – 1315	<i>DC Testing Methods</i>
1315 – 1420	<i>Evaluation of Test Data</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0830	<i>Precautions when Performing DC Test</i>
0830 – 0930	<i>AC Voltage Testing Methods</i>
0930 – 0945	<i>Break</i>
0945 – 1045	<i>Transformers Types and Applications</i>
1045 – 1130	<i>Preventive Maintenance of Transformers</i>
1130 – 1230	<i>Transformer Troubleshooting & Inspection Techniques</i>
1230 – 1245	<i>Break</i>
1245 – 1315	<i>Risk Assessment before Dealing with Transformers</i>
1315 – 1420	<i>Cables Types and Applications</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0830	<i>Cable Failure and Analysis</i>
0830 – 0930	<i>Cables Troubleshooting & Inspection Techniques</i>
0930 – 0945	<i>Break</i>
0945 – 1045	<i>Testing and Acceptance of Cables</i>
1045 – 1130	<i>Cable Fault Locating Methods</i>
1130 – 1230	<i>Risk Assessment before Inspecting an Energized Cable</i>
1230 – 1245	<i>Break</i>
1245 – 1315	<i>LV & MV Switchgear and Protective Relays</i>
1315 – 1420	<i>Switchgear Maintenance</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

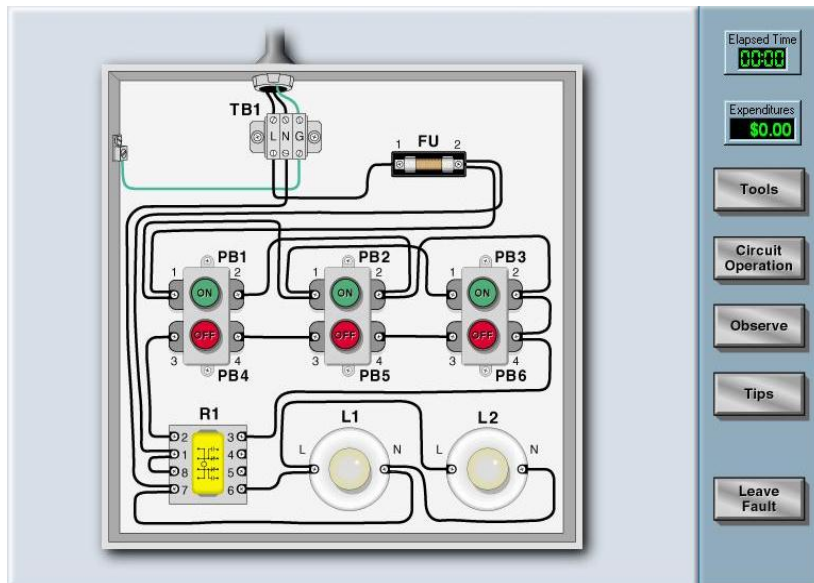
0730 – 0830	<i>Switchgear Troubleshooting, Inspection & Testing</i>
0830 – 0930	<i>Risk Assessment before Inspecting Switchgear</i>
0930 – 0945	<i>Break</i>
0945 – 1045	<i>Motors Types and Applications</i>
1045 – 1130	<i>Motor Troubleshooting, Testing & Inspection</i>
1130 – 1230	<i>Risk Assessment before Inspecting Motors</i>
1230 – 1245	<i>Break</i>
1245 - 1315	<i>Generator Types and Applications</i>
1315 – 1420	<i>Troubleshooting, Testing & Inspecting Generators</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Four</i>

Day 5

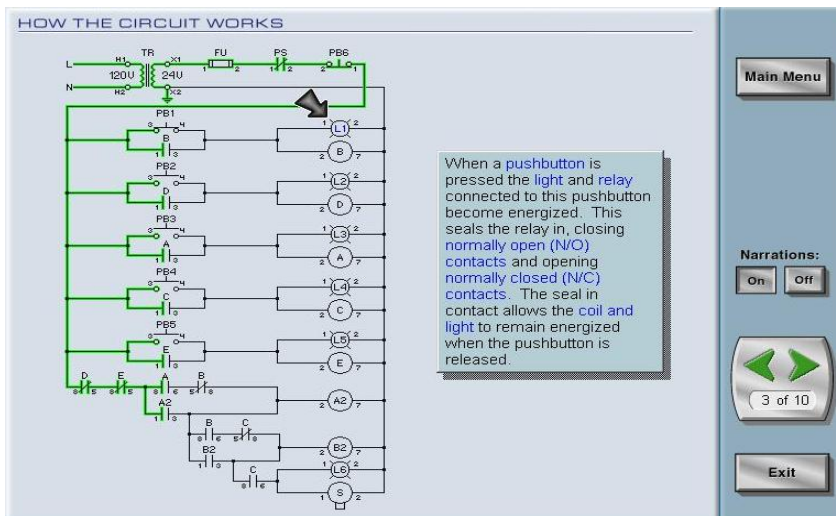
0730 – 0830	<i>Risk Assessment before Inspecting a Generator</i>
0830 – 0930	<i>Electrical Power System Grounding</i>
0930 – 0945	<i>Break</i>
0945 – 1045	<i>Electrical Safety and Work Place Electric Hazard Risk Assessment</i>
1045 – 1130	<i>Switching Practices and Precautions</i>
1130 – 1230	<i>Effect of Electrical Shock</i>
1230 – 1245	<i>Break</i>
1245 - 1345	<i>First Aid</i>
1345 – 1400	<i>Course Conclusion</i>
1400 – 1415	<i>POST-TEST</i>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Simulator (Hands-on Practical Sessions)


Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art “Haward Troubleshooting” simulator.



Basic Techniques



Basic Control Circuits



Guided Troubleshooting

Does the door operate properly?

Yes No

Observations

Minimize

Tools Observe Tips Elapsed Time 00:00 Expenditures \$0.00 Leave Fault

Motor Control Techniques

Course Coordinator

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