

COURSE OVERVIEW EE0763
115KV Cable Splicing Training & Certification

Course Title

115KV Cable Splicing Training & Certification

Course Date/Venue

Please refer to page 3

Course Reference

EE0763

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes practical sessions and exercises where participants carryout 115 KV cable jointing, termination, splicing and testing. Theory learnt in the class will be applied using the latest heat-shrink jointing and termination methods suitable for in-class training.



The range of voltage and capacity of power transmitted through cables is showing a steady increase over the years. Environmental concerns, aesthetic issues, lack of transmission corridors and difficulty in routing overhead lines in crowded human habitats are some of the reasons for the explosive growth of cable technology well into the new voltage range. Due to physical limits on cable lengths for manufacturing and packaging, joints in cable become inevitable, particularly in the context of the utility sector. The cables need to be also terminated at sending and receiving end equipment, a very wide variety of them, in utility as well as industry applications and these calls for appropriate cable termination accessories.



Cable terminations and joints form the weakest link in any distribution system. Also, a failed joint in an underground distribution system is much more difficult to locate and repair compared to any similar problem in overhead distribution systems. This means that we should do our utmost to achieve a good joint or termination, which can give years of trouble-free service.



The quality of a joint or termination depends to a large extent on the skill of cable joiner/splicer. The aim of a cable joiner/splicer must therefore be to obtain joint which electrical properties are as good as the original cable both in electrical and mechanical terms. The design of cable splicing, jointing and termination accessories is based on this perception. Dependence on operator-skill is sought to be reduced to the extent possible by good choice and quality of jointing materials, though such dependence cannot be totally eliminated.

We will discuss these issues in this course by looking at the fundamental theoretical aspects involved so that the importance of the correct cable splicing, termination and jointing will be brought home to those who attend the course.

Course Objectives

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

- Apply proper techniques in 115 KV cable splicing, jointing, terminating and testing
- Discuss cable jointing and the different types of cables, insulation materials, terminations and joints
- List insulation materials for different application and voltages and use screen in 115KV cables and armor for guard community and mechanical protection
- Discuss special aspects of single core cables, voltage rating, stress distribution, electrical breakdown, 115KV cables using XLPE insulation and need for end sealing of cables
- Analyze cable connections including the basic principles of cable jointing and terminations, its types, current path, methods of connection, comparison and contact resistance
- Illustrate proper joints and terminations and identify the different types of connectors and connection methods of 115 KV cables as well as apply the different methods of cable termination, jointing and choosing an appropriate type of every application
- Calculate stress control and determine the effect of joints and terminations on stress gradients and the areas requiring stress control
- Carryout proper cable jointing, splicing, testing and terminating
- Implement the applicable standards, the types of tests and its limitations
- Find reasons for cable failures and perform analysis of failures with a predictive approach
- Apply new trends and technologies utilized in the industry

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 115 KV cables for those who are involved in splicing, jointing and termination of power cables including electrical engineers, instrumentation and control engineers, project engineers, maintenance engineers, power system protection and control engineers, building service designers, data systems planners and managers as well as electrical, instrumentation and control technical staff.

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.

Accommodation

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

Course Date/Venue

Session(s)	Date	Venue
1	May 18-22, 2026	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
2	August 02-06, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
3	October 04-08, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
4	November 15-19, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
5	December 13-17, 2026	Crowne Meeting Room, Crowne Plaza Al Khobar, an IHG Hotel, Al Khobar, KSA
6	January 17-21, 2027	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
7	March 21-25, 2027	Meeting Plus 9, City Centre Rotana, Doha, Qatar





Course Certificate(s)

(1) Internationally recognized Competency Certificates will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

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Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

CEUs

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CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-19

HTME No. 8667-2014-9020-2555

Participant Name: Abdulsatar Al Otaibi

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
EE0763	115KV Cable Splicing Training and Certification	November 10-14, 2019	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY



Maricel De Guzman
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 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 Association 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 is accredited by









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Certificate Accreditations

Haward’s certificates are accredited by the following international accreditation organizations: -

-  British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward’s certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

-  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 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. Steve Mark, PE, MSc, BSc, is a **Senior Electrical & Telecommunications Engineer** with over **20 years** of extensive experience within the **Oil & Gas, Petrochemical** and **Power** industries specializing in **Certified Electrical Safety Compliance Professional**, Safety Instrumented Systems (**SIS**), Safety Integrity Level (**SIL**), **Overhead Power Line Maintenance Patrolling & Washing, Energy Transmission & Distribution, Transmission Line Structures, Insulators & Accessories, Transmission Line Construction & Maintenance, Insulated Power Cables, High Voltage Applications, Transmission Line Parameters, Sag & Tension of Conductor, Geomagnetic Disturbances, Reactive Power Compensation, Overhead Line Troubleshooting, Patrolling, Troubleshooting Safety, HV/LV Equipment, High Voltage Electrical Safety, LV & HV Electrical System, HV Equipments Inspection & Maintenance, HV Switchgear Operation & Maintenance, LV Distribution Switchgear & Equipment, Basic Electricity, Electrical & Special Hazards, Personnel Protection, Motor Controllers, Electrical Switching Practices, Emergency Planning, Safety Management, Earthing & Bonding Installation, Energized & De-Energized Work, Protection Relays, Testing & Commissioning, Lock & Tag Out, Circuit Breakers & Switchgears, Portable Cables, Transformers, Surge Arrestors, Isolators & Fuses, Capacitor Banks, Earth & Shunt Reactors, Gas Insulated Substations (GIS), HV Substation Inspection & Reporting, HV Cable Design, HV Electrical System Commissioning, HV Equipments Inspection & Maintenance, UPS & Generators, Electrical Installations Design & Construction, Electrical Mechanical Installations, GIS Substations, GE Turbine Power Plant and Steam Power Plants**. Further, he is also well-versed in **Network & System Administration**, Data/Voice Networking, Network Capacity Calculations, VPN Connection Implementation, Structured Cabling Constructions, Engineering Design, Security Installations Design & Implementation, Logistics Management, IT Analysis, Business Continuity Plan Design, Disaster Recovery Simulations, Supply Chain System Design, Barcode Marking & RFID Applications. He is currently the **Lead Electrical Engineer** of Public Power Corporation S.A wherein he is responsible for site manufacturing supervision of works and electrical maintenance support for the existing Steam Electrical Power Plant.

During his career life, Mr. Mark has gained his expertise and thorough practical experience through handling challenging positions such as being the **IT & Telecommunications Manager, IT & Organization Manager, Logistics Manager, Electrical Engineer, Safety Engineer, Public Works Contractor, IT Support Analyst, Project Supervisor, Systems & Network Administrator, Data Protection Officer**, Shop Auditor and Amateur Radio Operator for various multi-national companies and institutes.

Mr. Mark is a **Registered Professional Engineer** and holds a **Master's degree in Quality Management & Technology** from the **Hellenic Open University** as well as a **Bachelor's degree in Electrical Engineering** from the **Technical University of Halkida, Euboea, Greece**. Further, he is a **Certified Instructor/Trainer**, a **Certified Safety Engineer** and a **Certified Data Protection Officer (DPO)**. Moreover, he is a member of Scientific Society of Technological Education of Engineers (EETEM) and has delivered numerous trainings, courses, seminars, workshops and conferences internationally.



Course Fee

Abu Dhabi	US\$ 6,250 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Dubai	US\$ 6,250 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	US\$ 6,750 per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Cairo	US\$ 6,750 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Al Khobar	US\$ 6,250 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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	Introduction
0900 – 0930	Course Overview <i>Need for Cable Joints & Terminations • Cables- Historic Perspective • Types of Cables • Types of Insulation Materials • Basic Types of Terminations & Joints • Installation Aspects; Reducing the Number of Joints by Proper Planning • Standards, Testing & Failures</i>
0930 – 0945	<i>Break</i>
0945 - 1100	Cables <i>Construction of Electrical Power Cables • Different Types of Cables for Various Voltage Ratings & Manufacturing Aspects • Conductor Materials & Configurations • Insulation Materials for Different Applications & Voltages • Use of Screen in 115 KV Cables</i>
1100 – 1200	Cables (cont'd) <i>Use of Armor for Ground Continuity & Mechanical Protection • Special Aspects of Single Core Cables • Voltage Rating of Cables & Impact of System Grounding Method on Voltage Rating • Stress Distribution in Single Core & Multi-Core Power Cables</i>
1200 – 1215	<i>Break</i>
1215 – 1420	Cables (cont'd) <i>Electrical Breakdown of Insulating Materials • 115 KV Cables Using XLPE Insulation • Treeing in XLPE & Need for End Sealing of Cables in Storage • Basic Manufacturing Process</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>



1430	Lunch & End of Day One
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Day 2

0730 – 0930	Cable Connectors <i>The Basic Principles of Cable Jointing & Terminations • Types of Connectors for Cable Terminations & Joints • Current Path • Method of Connections • Comparison • Contact Resistance • Preferred Methods in Practice for Different Cable Ratings • Contact of Dissimilar Materials & Galvanic Effects; Use of Bi-Metal Accessories</i>
0930 – 0945	Break
0945 - 1100	Joints & Terminations Theory <i>Different Types of Connectors & Connection Methods for 115 KV Cables • Different Methods of Cable Termination & Jointing & Choosing an Appropriate Type for Every Application</i>
1100 - 1200	Joints & Terminations Theory (cont'd) <i>Important Installation Aspects in Cable Joints & Terminations for 115 KV Cables • Connectivity for Cable Screen & Armor • Mechanical Protection of Joints & Terminations</i>
1200 – 1215	Break
1215 – 1420	Practical Session #1
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Stress Control <i>Effect of Joints & Terminations on Stress Gradients • Areas Requiring Stress Control • Importance of Stress Control & Methods of Stress Redistribution in Joints & Terminations for 115 KV Cables</i>
0930 – 0945	Break
0945 – 1100	Jointing & Termination Practice <i>Kits for Joints & Terminations • Shelf Life Issues • Importance of Matching Diameter of Insulated Conductor with Kit Specifications in Pre-Fabricated Kits • Preparation of Cable for Termination & Jointing</i>
1100 – 1200	Jointing & Termination Practice (cont'd) <i>Connection • Reconstitution of Cable Properties • Continuity & Grounding Aspects • Sealing • Healthiness of Joint/Termination • Installation Aspects for Joints • Access for Repairs</i>
1200 – 1215	Break
1215 – 1420	Practical Session #2
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	Lunch & End of Day Three





Day 4

0730 – 0930	Standards & Testing <i>International/National Standards • Type Tests • Limitations</i>
0930 – 0945	Break
0945 – 1100	Important Installation Aspects in Cable Joints & Terminations
1100 – 1200	Terminations to Equipment <i>Terminations to Indoor Switchgear • Terminations to Electrical Machines • Termination of Outdoor 115 KV Installations • Terminations to GIS Installations • Importance of Correct Orientation of Terminations</i>
1200 – 1215	Break
1215 – 1420	Practical Session #3
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	Lunch & End of Day Four

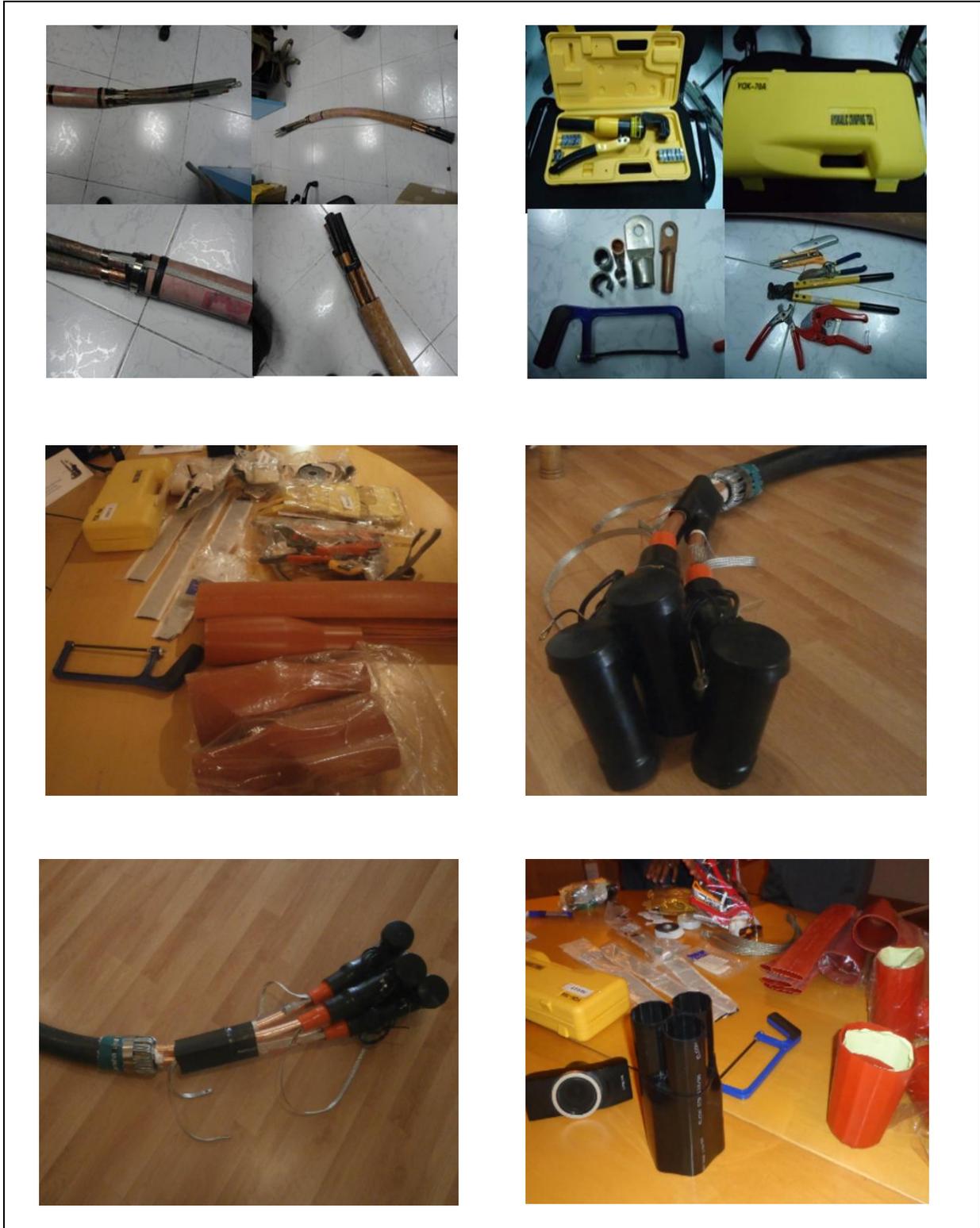
Day 5

0730 – 0930	Failures & Analysis <i>Reasons for Failures • Documentation of Work • Documentation of Failures</i>
0930 – 0945	Break
0945 - 1200	Failures & Analysis (cont'd) <i>Failures, Failure Analysis & Failure Prediction for 115 KV Cables • Analysis of Failures • Predictive Approach</i>
1200 - 1215	Break
1215 - 1300	New Trends <i>Reasons for Increasing Preference to Underground Cables • New Technologies for Very High Capacities & Voltages • 115 KV XLPE • High Temperature Superconductivity in Cables & Likely Impact on Current Practices • Future Trends in Cable Technology & Cable Accessories for 115 KV Cables</i>
1300 - 1315	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1315 – 1415	COMPETENCY EXAM
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course



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 splicing, jointing and termination exercises using heat shrink kits, suitable for classroom training.



Course Coordinator





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