COURSE OVERVIEW EE0525
Gutor & CEG UPS Design, Operation, Maintenance & Troubleshooting

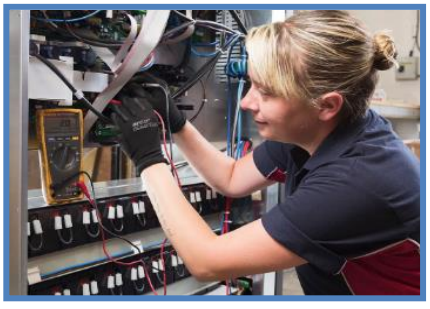
Course Title
Gutor & CEG UPS Design, Operation, Maintenance & Troubleshooting

Course Date/Venue
Session 1: June 16-20, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: December 14-18, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
EE0525

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

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

This course is designed to provide participants with a detailed and up-to-date overview Gutor and CEG UPS design, operation, maintenance and troubleshooting. It covers the Gutor and CEG UPS system; the rectifier and inverter stage; the Gutor and CEG UPS system configuration; the front panel (LCD & LED), rear panel, external battery bank or module, battery and battery charger, static bypass and manual bypass; the terminal board, semiconductor components, AC to DC conversion and DC to AC inversion; and the invert control, user communications panel, solutions to power problems and UPS system reliability parameters.

During this interactive course, participants will learn the UPS battery checkup and maintenance services; the UPS maintenance techniques and manufacturers recommendations; the tools and equipment and mechanical requirements of component replacement; the replacement of the filters; the LED and display test, advanced battery monitoring (ADM) test and discharge test; the life cycle monitoring (LCM), UPS system troubleshooting and test equipment; and the control and interface troubleshooting, rectifier troubleshooting and inverter troubleshooting.

Course Objectives

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

- Apply and gain an in-depth knowledge on Gutor and CEG UPS design, operation, maintenance and troubleshooting
- Discuss the Gutor and CEG UPS system including rectifier and inverter stage
- Configure Gutor and CEG UPS system and identify front panel (LCD & LED), rear panel, external battery bank or module, battery and battery charger, static bypass and manual bypass
- Recognize terminal board, semiconductor components, AC to DC conversion and DC to AC inversion
- Determine invert control, user communications panel, solutions to power problems and UPS system reliability parameters
- Carryout UPS battery checkup and maintenance services, UPS maintenance techniques and manufacturers recommendations
- Identify the tools and equipment and mechanical requirements of component replacement
- Replace the filters and perform LED and display test, advanced battery monitoring (ADM) test and discharge test
- Illustrate life cycle monitoring (LCM), UPS system troubleshooting and test equipment
- Employ control and interface troubleshooting, rectifier troubleshooting and inverter troubleshooting

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 a basic overview of all significant aspects and considerations of Gutor and CEG UPS design, operation, maintenance and troubleshooting for engineers and other technical staff who are involved in maintenance and troubleshooting of UPS systems and battery power supplies.

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: -

- 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.

- 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. Sydney Thoresson, PE, BSc, is a **Senior Electrical & Instrumentation Engineer** with over **30 years** of extensive experience within the **Petrochemical**, **Utilities**, **Oil**, **Gas** and **Power** industries. His specialization highly evolves in **Process Instrumentation & Control**, **Instrument Calibration & Maintenance**, **Field Instrumentation**, **Emergency Shutdown** System, **Process Control & Safeguarding**, **Refining & Rotating Equipment**, **Equipment Operations**, **Short Circuit Calculation**, **Voltage Drop Calculation**, **Lighting Calculation**, **Hazardous Area Classification**, **Intrinsic Safety**, **Liquid & Gas Flowmetering**, **Custody Measurement**, **Ultrasonic Flowmetering**, **Loss Control**, **Gas Measurement**, **Process Control Instrumentation**, **Compressor Control & Protection**, **Control Systems**, Programmable Logic Controllers (**PLC**), **SCADA**, Distributed Control Systems (**DCS**) especially in **Honeywell DCS**, **H&B DCS**, **Modicon, Siemens**, **Telemecanique**, **Wonderware** and **Adrioit,** Safety Instrumented Systems (**SIS**), Safety Integrity Level (**SIL**), Emergency Shutdown (**ESD**), **Flowmetering & Custody Measurement**, **Multiphase Flowmetering**, **Measurement and Control**, **Mass Measuring System Batching** (**Philips**), Arc Furnace Automation-Ferro Alloys, Walking Beam Furnace, Blast Furnace, Billet Casting Station, Cement Kiln Automation, Factory Automation and Quality Assurance Accreditation (**ISO 9000** and **Standard BS 5750**). Further, he is also well-versed in **Electrical Safety**, **Electrical Hazards Assessment**, **Electrical Equipment**, **Personal Protective Equipment**, Lock-Out & Tag-Out (**LOTO**), Confined Workspaces, Power **Quality**, Power **Network**, Power **Distribution**, **Distribution Systems**, **Power Systems Control**, **Power Systems Security**, Power **Electronics**, Electrical **Substations**, **UPS** & **Battery System**, **Earthing & Grounding**, Power **Generation**, **Protective Systems**, **Electrical Generators**, **Power** & **Distribution Transformers**, **Electrical Motors**, **Switchgears**, **Transformers**, **AC** & **DC Drives**, **Variable Speed Drives** & **Generators** and **Generator Protection**. He is currently the **Projects Manager** wherein he manages projects in the field of electrical and automation engineering and in-charge of various process hazard analysis, fault task analysis, FMEA and HAZOP study.

During Mr. Thoresson's career life, he has gained his thorough and practical experience through various challenging positions and dedication as the **Contracts & Projects Manager**, **Managing Director**, **Technical Director**, **Divisional Manager**, **Plant Automation Engineer**, **Senior Consulting Engineer**, **Senior Systems Engineer**, **Consulting Engineer**, **Service Engineer** and **Section Leader** from several international companies such as **Philips**, **FEDMIS**, **AEG**, **DAVY International**, **BOSCH**, **Billiton** and **Endress/Hauser**.

Mr. Thoresson is a **Registered Professional Engineering Technologist** and has a **Bachelor** degree in **Electrical & Electronics Engineering** and a **National Diploma** in **Radio Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and an active member of the International Society of Automation (**ISA**) and the Society for Automation, Instrumentation, Measurement and Control (**SAIMC**). He has further delivered numerous trainings, courses, seminars, conferences and workshops worldwide.

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 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	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0900	***Gutor UPS System Overview***
0900 – 0930	***CEG UPS System Overview***
0930 – 0945	*Break*
0945 – 1030	***Rectifier Stage***
1030 – 1130	***Inverter Stage***
1130 – 1230	***Gutor UPS System Configuration***
1230 – 1245	*Break*
1245 – 1345	***CEG UPS System Configuration***
1345 - 1420	***Front Panel (LCD & LED)***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Rear Panel***
0830 – 0930	***External Battery Bank or Module***
0930 – 0945	*Break*
0945 – 1030	***Battery & Battery Charger***
1030 – 1130	***Static Bypass***
1130 – 1230	***Manual Bypass***
1230 – 1245	*Break*
1245 – 1345	***Terminal Board***
1345 - 1420	***Semiconductor Components***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***AC to DC Conversion***
0830 – 0930	***DC to AC Inversion***
0930 – 0945	*Break*
0945 – 1030	***Invert Control***
1030 – 1130	***User Communications Panel***
1130 – 1230	***Solutions to Power Problems***
1230 – 1245	*Break*
1245 – 1345	***UPS System Reliability Parameters***
1345 - 1420	***UPS Battery Check Up & Maintenance Services***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

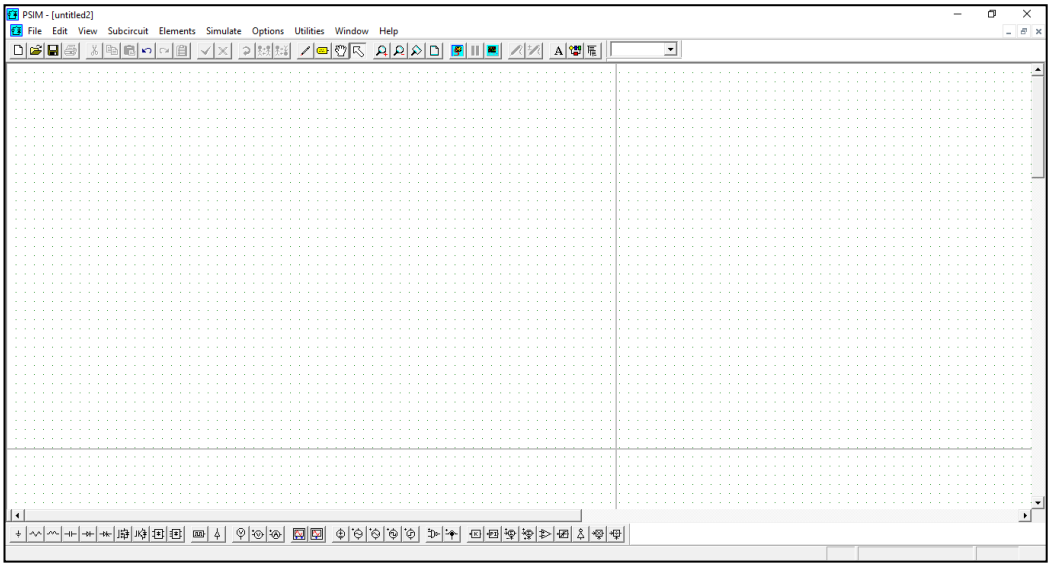
0730 – 0830	***UPS Maintenance Techniques***
0830 – 0930	***Manufacturers Recommendations***
0930 – 0945	*Break*
0945 – 1030	***Tools & Equipment***
1030 – 1130	***Mechanical Requirements of Component Replacement***
1130 - 1230	***Replace the Filters***
1230 – 1245	*Break*
1245 – 1345	***Perform LED & Display Test***
1345 - 1420	***Perform Advanced Battery Monitoring (ABM) Test***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

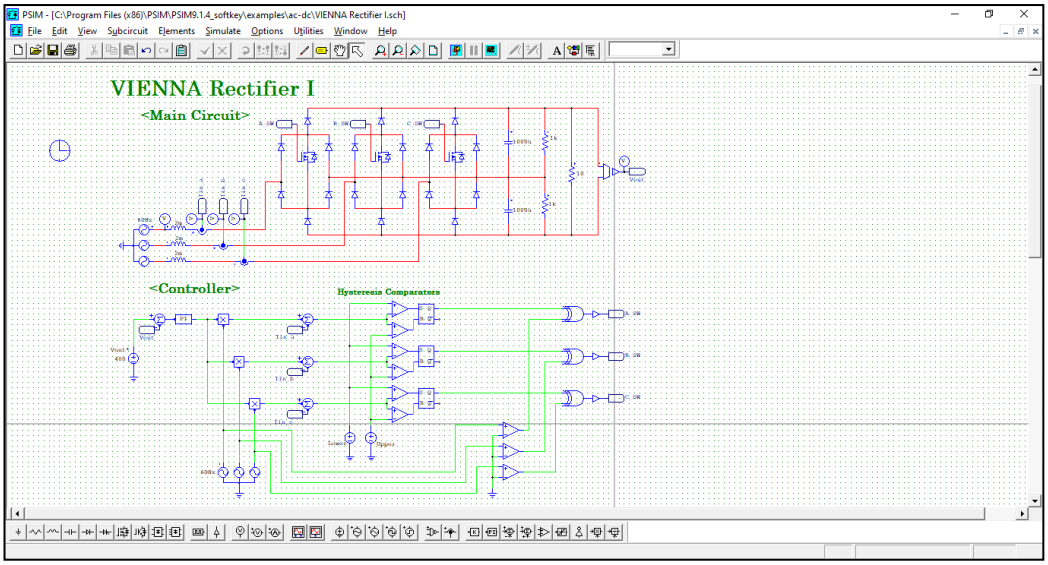
Day 5

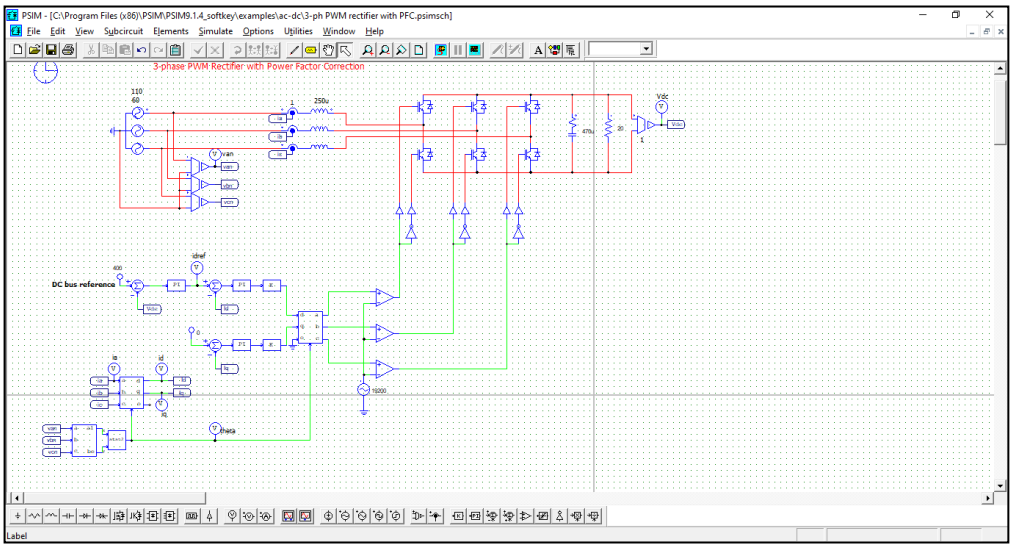
0730 – 0830	***Perform Discharge Test***
0830 – 0930	***Life Cycle Monitoring (LCM)***
0930 – 0945	*Break*
0945 – 1030	***UPS System Troubleshooting***
1030 – 1130	***Test Equipment***
1130 – 1230	***Control & Interface Troubleshooting***
1230 - 1245	*Break*
1245 – 1315	***Rectifier Troubleshooting***
1315 - 1345	***Inverter Troubleshooting***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

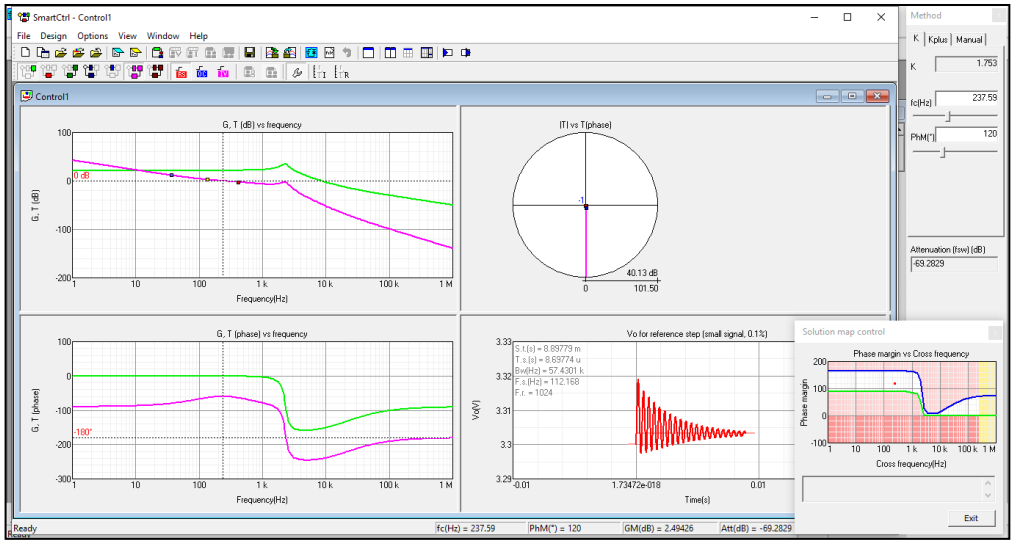
Simulator (Hands-on Practical Sessions)

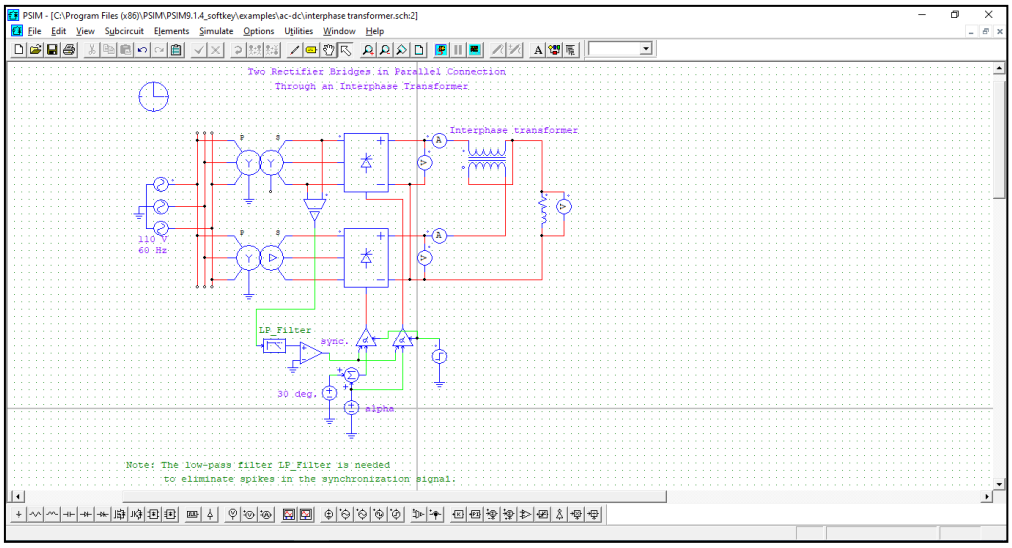
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art “PSIM v9.1.4.400” Software.











Course Coordinator
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