COURSE OVERVIEW IE0990
Programmable Logic Controller (PLC) Operations, Maintenance & Troubleshooting (GE FANUC Series Six)

Course Title
Programmable Logic Controller (PLC) Operations, Maintenance and Troubleshooting (GE FANUC Series Six)

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
IE0990

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 simulator.

This course is designed to provide delegates with an up-to-date overview on GE FANUC PLC. It covers the programmable logic controllers, switches and contacts, circuits and software programming; the PLC hardware (VersaMaxTM or 90-30 PLCs); the programmable controllers; the CPUs, local I/O, system expansion options and software; the programming software (VersaProTM); the configuration autor or programmer; and the racks and slots, storing a configuration, pre-programming information and CPU operation.

During this interactive course, participants will learn the standard sweep/constant sweep modes and stop modes, the privilege levels and passwords; executing the program; the memory references and allocation; the simple programming, contact and coils including normally open, normally closed and continuation contacts; the positive/negative transition, retentive/set/reset, negated/retentive, continuation coils; the timers and counters; and the on-delay stopwatch, off and on delay timers and up/down counters.

Course Objectives

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

- Apply and gain an in-depth knowledge on GE FANUC series 5 PLC

- Discuss programmable logic controllers, switches and contacts, circuits, software programming

- Review PLC hardware (VersaMaxTM or 90-20 PLCs) as well as programmable controllers

- Explain CPUs, local I/O, system expansion options and software

- Discuss programming software (VersaProTM) and configure autor or programmer

- Analyze racks and slots, storing a configuration, pre-programming information and CPU operation

- Recognize standard sweep/constant sweep modes as well as stop modes

- Identify privilege levels and passwords, execute program and determine memory references and memory allocation

- Illustrate simple programming, contact and coils including normally open, normally closed and continuation contacts

- Define positive/negative transition, retentive/set/reset, negated/retentive and continuation coils

- Discuss timers and counters and analyze on-delay stopwatch, off and on delay timers as well as up/down counters

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, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of GE FANUC PLC for maintenance engineers associated with the operation and maintenance of the GE Fanuc programmable controller.

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 who completed a minimum of 80% of the total tuition hours

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- **BAC**   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.

- **IACET**   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.

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. Barry Pretorius is a **Senior Instrumentation Engineer** with almost **45** years of extensive experience within the **Oil**, **Gas**, **Petrochemical**, **Refinery** & **Power** industries. His expertise widely covers in the areas of **Cyber Security** Practitioner, **Cyber Security** of Industrial Control System, **IT Cyber Security** Best Practices, **Cybersecurity** Fundamentals, **Ethical Hacking & Penetration Testing**, **Cybersecurity** Risk Management, **Cybersecurity** Threat Intelligence, **OT Whitelisting** for Better Industrial Control System Defense, **NESA** Standard and Compliance Workshop, **OT**, **Cyber Attacks** Awareness - Malware/Ransom Ware / Virus /Trojan/ Philsing, **Information Security Manager**, **Security System** Installation and Maintenance, Security of Distributed Control System (**DCS**), Process Control, Instrumentation, Safeguarding & Security, Programmable Logic Controller (**PLC**), **Siemens PLC** Simatic S7-400/S7-300/S7-200, **PLC & SCADA** for Automation & Process Control, **Artificial Intelligence**, **Allen Bradley PLC** Programing and Hardware Trouble Shooting, Schneider **SCADA System**, **Wonder Ware**, **Emerson**, **Honeywell**, **Honeywell** Safety Manager PLC, **Yokogawa**, Advanced **DCS Yokogawa**, **Endress & Hauser**, Field Commissioning and Start up Testing Pre Operations, System Factory Acceptance Test (**FAT**), System Site Acceptance Test (**SAT**), **SCADA HMI & PLC** Control Logic, Implementation, Systems Testing, Commissioning and Startup, **Foxboro DCS & Triconics, SIS** Systems, **Drives**, Motion Control, **Hydraulics**, **Pneumatics and Control Systems** Engineering, **Electrical & Automation Control Systems**, **HV/MV Switchgear, LV & MV** Switchgears & Circuit Breakers, **High Voltage Electrical Safety**, **LV & HV Electrical System**, **HV Equipment** Inspection & Maintenance, **LV Distribution Switchgear & Equipment**, **Electrical Safety**, **Electrical** Maintenance, **Transformers**, **Medium & High Voltage Equipment**, **Circuit Breakers**, **Cable & Overhead Line** Troubleshooting & Maintenance, **Electrical Drawing & Schematics**, **Voltage Distribution**, **Power Distribution**, **Filters**, **Automation System**, **Electrical Variable Speed Drives**, **Power** Systems, **Power Generation**, **Diesel Generators**, **Power Stations**, Uninterruptible Power Systems (**UPS**), **Battery Chargers**, **AC & DC Transmission**, **CCTV** Installation, **Data & Fire Alarm** System, **Evacuation** Systems and **Electrical Motors & Variable Speed Drives**, & Control of Electrical and Electronic devices.

During Mr. Pretorius's career life, he has gained his practical experience through several significant positions and dedication as the **Senior Technical Analyst, Team Leader, Pre-operations Startup Engineer, Automation System's Software Manager, Automation System's Senior Project Engineer, PLC Specialist, Site Manager, Senior Project & Commissioning Engineer, Technical Director, Project Engineer, Radio Technician**, **A T E Technician** and **Senior Instructor/Trainer** from various companies like the ADNOC Sour Gas, Ras Al Khair Aluminum Smelter, Johnson Matthey Pty. Ltd, Craigcor Engineering, Unitronics South Africa Pty (Ltd), Bridgestone/Firestone South Africa Pty (Ltd) and South African Defense Force.

Mr. Pretorius's has a Higher Diploma in **Electrical Engineering Heavy Current**. Further, he is a **Certified Instructor/Trainer** and delivered numerous trainings, courses, workshops, seminars and conferences internationally.

Accommodation

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

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 – 0930	Introduction to Programmable Logic Controllers
0930 – 0945	Break
0945 – 1100	Switches & Contacts, Circuits, Software Programming
1100 – 1230	PLC Hardware (VersaMaxTM or 90-30 PLCs)
1230 – 1245	Break
1245 – 1420	Programmable Controllers
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0900	CPUs
0900 – 0915	Break
0915 – 1100	Local I/O
1100 – 1130	System Expansion Options
1130 – 1230	Software
1230 – 1245	Break
1245 – 1330	Introduction to Programming Software (VersaProTM)
1330 – 1420	Configuration: Auto or Programmer
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

|	
0730 – 0930	Racks & Slots
0930 – 0945	Break
0945 – 1100	Storing a Configuration
1100 – 1130	Pre-Programming Information
1130 – 1215	CPU Operation
1215 – 1230	Break
1230 – 1420	Standard Sweep/Constant Sweep Modes
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0930	Stop Modes
0930 – 0945	Break
0945 – 1100	Privilege Levels & Passwords
1100 – 1130	Program Execution
1130 – 1215	Memory References & Memory Allocation
1215 – 1230	Break
1230 – 1420	Simple Programming
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5

0730 – 0930	**Contacts & Coils**
0930 – 0945	*Break*
0945 – 1100	**Normally Open, Normally Closed, Continuation Contacts**
1100 – 1130	**Positive / Negative Transition, Retentive / Set / Reset, Negated / Retentive, Continuation Coils**
1130 – 1215	**Timers & Counters**
1215 – 1230	*Break*
1230 – 1300	**On-Delay Stopwatch, Off & On Delay Timers**
1300 – 1345	**Up/Down Counters**
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 "GE Fanuc Series 90-30 PLC" simulator.

GE Fanuc Series 90-30 PLC Simulator
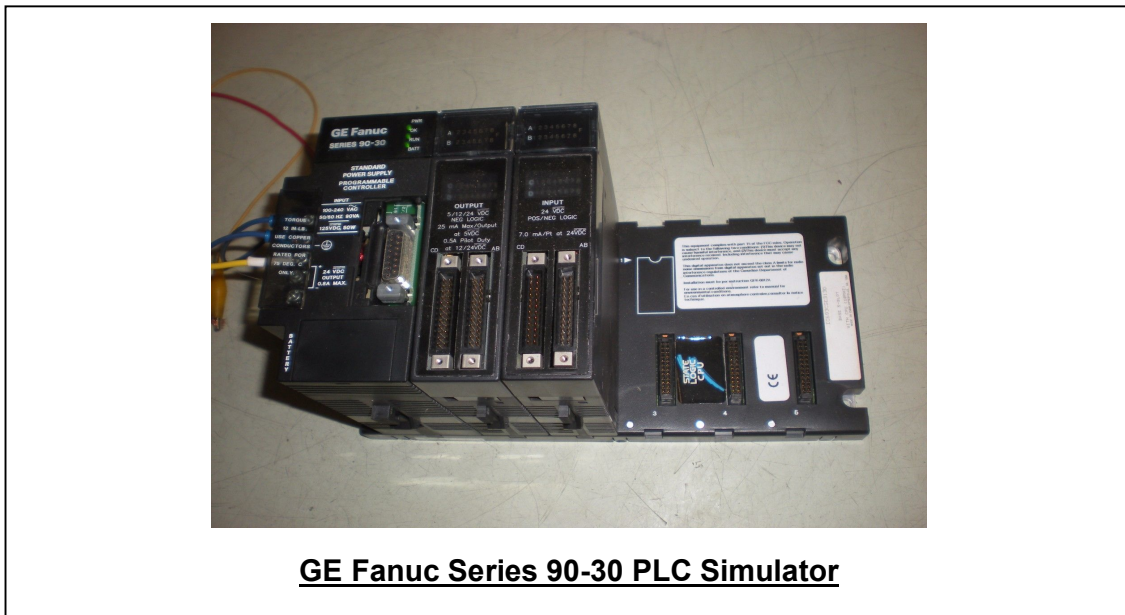
Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org