COURSE OVERVIEW EE0693
IN-G560 DCS800 DC Drive Basic Course, Start-Up, Maintenance & Service Hands-on & Communication with PLC-From ABB

Course Title
IN-G560 DCS800 DC Drive Basic Course, Start-Up, Maintenance & Service Hands-on & Communication with PLC-From ABB

Course Date/Venue
June 23-27, 2025/Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

3.0 CEUs (30 PDHs) AWARD

H-STK© INCLUDED

Course Reference
EE0693

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.

This course is designed to provide participants with a detailed and basic overview of IN-G560 DCS800 DC Drive Start-Up, Maintenance and Service Hands-on. It covers the DCS800 DC drives and their applications in marine and offshore construction; the basic principles and operation of DC Drives; the fundamentals of DC motor control; the components of DCS800 DC including rectifiers, inverters and control units; and the safety protocols for working with DC drives including personal protective equipment (PPE) and risk assessment.

Further, the course will also discuss the proper installation of DCS800 drives; the environmental considerations and mounting techniques; the drive parameters and their functions; the basic configuration settings, control panel operation, start-up procedures and software tools for configuration management; the advanced parameter settings and techniques for tuning drive performance; matching drive settings to load requirements; setting-up communication protocols; and integrating drives into automation systems.

During this interactive course, participants will learn to troubleshoot and resolve common faults and routine maintenance procedures; developing maintenance schedule, using diagnostic tools for drive analysis and interpreting diagnostic data and fault codes; the techniques for preventing common issues and predictive maintenance practices; the components that needs replacement and procedures for replacing drive components; customizing drives for specific applications; and developing standard operating procedures (SOPs) for drive start-up, maintenance and troubleshooting.

Course Objectives

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

- Apply and gain a basic knowledge on IN-G560 DCS800 DC drive start-up, maintenance and service hands-on
- Discuss the DCS800 DC drives and their applications in marine and offshore construction
- Explain the basic principles and operation of DC Drives as well as the fundamentals of DC motor control
- Identify the components of DCS800 DC including rectifiers, inverters and control units
- Apply safety protocols for working with DC drives including personal protective equipment (PPE) and risk assessment
- Employ proper installation of DCS800 drives as well as the environmental considerations and mounting techniques
- Discuss the drive parameters and their functions and navigate drive interface
- Apply basic configuration settings, control panel operation, start-up procedures and software tools for configuration management
- Carryout advanced parameter settings and techniques for tuning drive performance
- Match drive settings to load requirements, set-up communication protocols and integrate drives into automation systems
- Troubleshoot and resolve common faults and apply routine maintenance procedures
- Develop maintenance schedule, use diagnostic tools for drive analysis and interpret diagnostic data and fault codes
- Apply techniques for preventing common issues and predictive maintenance practices
- Identify the components that needs replacement and procedures for replacing drive components
- Customize drives for specific applications and develop standard operating procedures (SOPs) for drive start-up, maintenance and 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 an overview of all significant aspects and considerations of IN-G560DCS800 DC drive basic course, start-up, maintenance and service hands-on for electrical control circuits and equipment for electrical, instrumentation and control engineers and other technical staff who are involved in the design, engineering, operation, maintenance and control of the electric power system and for those interested in obtaining a working knowledge and skill on troubleshooting electrical equipment and control circuits

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 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 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

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. Ahmed Abozeid is a **Senior Electrical & Instrumentation Engineer** with over **30 years** of **Onshore** & **Offshore** experience within the **Oil** & **Gas** and **Power** industries. His wide expertise covers **HV Cable** Design, **Cable** Splicing & Termination, **Cable** Jointing Techniques, **High Voltage** Electrical Safety, **HV/MV Cable Splicing**, **High Voltage Circuit Breaker** Inspection & Repair, **High Voltage Power System** Safe Operation, High Voltage Safety, **High Voltage Transformers**, Safe Operation of **High Voltage & Low Voltage Power Systems**, **Electric Distribution System Equipment**, **ABB 11KV Distribution Switchgear**, **Rotork Operation & Maintenance**, **Power System Protection and Relaying**, **Electrical Motors & Variable Speed Drives**, **Motor** Speed Control, Power Electronic Converters, Control Valve, **Flowmetering & Custody Transfer**, **Meters Calibration**, Installation & Inspection, **Crude Metering & Measurement Systems**, **Flow Meter Maintenance Troubleshooting**, AC Converters Section, Electromagnetic Compatibility (**EMC**), **Motor** Failure Analysis & Testing, **Machinery** Fault Diagnosis, **Bearing** Failure Analysis **Process Control & Instrumentation**, **Process Control Measurements**, **Control System Commissioning & Start-Up**, **Control System & Monitoring**, **Power Station Control System**, **Instrumentation Devices**, **Process Control & Automation**, **PID Controller**, Distributed Control Systems (**DCS**), Programmable Logic Controllers (**PLC**), **ABB PLC & DCS System**, **Gas Analyzers**, **Simulation Testing**, **Load Flow**, **Short Circuit**, **Smart Grid**, **Vibration Sensors**, **Cable Installation & Commissioning**, **Calibration Commissioning** and **Site Filter Controller**. Further, he is also well-versed in **Fundamentals of Electricity**, **Electrical Standards**, **Electrical Power**, **PLC**, **Electrical Wiring**, Machines, **Transformers**, **Motors**, **Power Stations**, **Electro-Mechanical Systems**, **Automation & Control Systems**, **Voltage Distribution**, **Power Distribution**, **Filters**, **Automation System**, **Electrical Variable Speed Drives**, **Power Systems**, **Power Generation**, **Power Transformers**, **Diesel Generators**, **Power Stations**, **Uninterruptible Power Systems** (**UPS**), **Battery Chargers** and **AC** & **DC Transmission**. He is currently the **Project Manager** wherein he manages, plans and implements projects across different lines of business.

Mr. Ahmed worked as the **Electrical Manager**, **Electrical Power & Machine Expert**, **Electrical Process Leader**, **Team Leader**, **Electrical Team Leader**, **Technical Instructor**, and **Instructor/Trainer** from various companies such as the Lafarge Nigeria, Egyptian Cement Company, ECC Training Center, Alrajhi Construction & Building Company and Ameria Cement Company, just to name a few.

Mr. Ahmed has a **Bachelor's** degree in **Electrical Engineering**. Further, he is a **Certified Instructor/Trainer, Certified TQUK Level 3 Vocational Achievement (RQF) Assessor** and has delivered numerous trainings, seminars, courses, workshops 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 workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: ***Monday, 23rd of June 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Overview of DCS800 DC Drives*** *Introduction to DCS800 DC Drives • Applications in Marine & Offshore Construction*
0930 – 0945	*Break*
0945 – 1030	***Basic Principles of DC Drives*** *Fundamentals of DC Motor Control • Understanding the Operation of DC Drives*
1030 – 1130	***Components of DCS800 DC Drives*** *Key Components: Rectifiers, Inverters, Control Units • Functions & Interactions of Components*
1130 – 1215	***Electrical Safety & Best Practices*** *Safety Protocols for Working with DC Drives • Personal Protective Equipment (PPE) & Risk Assessment*
1215 – 1230	*Break*
1230 – 1330	***Installation Guidelines*** *Steps for Proper Installation of DCS800 Drives • Environmental Considerations & Mounting Techniques*
1330 – 1420	***Case Study: Successful DC Drive Installations*** *Review of Real-World Installation Projects • Group Discussion on Best Practices*
1420 – 1430	***Recap*** *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*
1430	*Lunch & End of Day One*

Day 2: ***Tuesday, 24th of June 2025***

0730 – 0830	***Drive Parameters*** *Overview of Key Parameters & their Functions • Navigating the Drive Interface*
0830 – 0930	***Basic Configuration Settings*** *Setting up Motor & Drive Parameters • Configuring Control Modes (Speed, Torque, etc.)*
0930 – 0945	*Break*
0945 – 1100	***Control Panel Operation*** *Using the DCS800 Control Panel • Basic Operations & Menu Navigation*
1100 – 1215	***Start-Up Procedures*** *Step-by-Step Guide to Drive Start-up • Initial Testing & Verification*
1215 – 1230	*Break*
1230 – 1330	***Parameter Backup & Restore*** *Techniques for Backing up & Restoring Parameters • Using Software Tools for Configuration Management*

1330 – 1420	***Practical Exercise: Drive Start-Up*** *Hands-on Session for Configuring & Starting up a DCS800 Drive • Group Discussion on Common Start-up Challenges*
1420 – 1430	***Recap*** *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*
1430	*Lunch & End of Day Two*

Day 3: Wednesday, 25th of June 2025

0730 – 0830	***Advanced Parameter Settings*** *In-Depth Look at Advanced Drive Parameters • Customizing Settings for Specific Applications*
0830 – 0930	***Tuning & Optimization*** *Techniques for Tuning Drive Performance • Adjusting Parameters for Optimal Efficiency*
0930 – 0945	*Break*
0945 – 1100	***Load Analysis & Matching*** *Understanding Load Characteristics • Matching Drive Settings to Load Requirements*
1100 – 1215	***Communication & Networking*** *Setting up Communication Protocols (Modbus, Profibus, etc.) • Integrating Drives into Automation Systems*
1215 – 1230	*Break*
1230 – 1330	***Drive Protection & Fault Handling*** *Configuring Protection Parameters • Troubleshooting & Resolving Common Faults*
1330 – 1420	***Practical Exercise: Advanced Configuration*** *Hands-on Session for Advanced drive Configuration & Tuning • Group Discussion on Optimization Techniques*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the T were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4: Thursday, 26th of June 2025

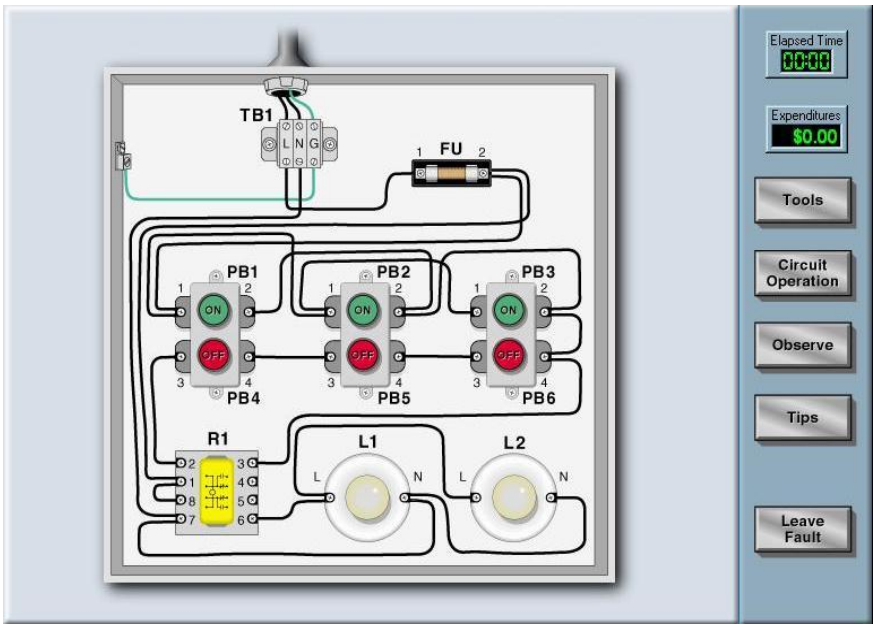
0730 – 0930	***Routine Maintenance Procedures*** *Developing a Maintenance Schedule • Key Maintenance Tasks for DCS800 Drives*
0930 – 0945	*Break*
0945 – 1100	***Diagnostic Tools & Techniques*** *Using Diagnostic Tools for Drive Analysis • Interpreting Diagnostic Data & Fault Codes*
1100 – 1215	***Preventive Maintenance Strategies*** *Techniques for Preventing Common Issues • Implementing Predictive Maintenance Practices*
1215 – 1230	*Break*
1230 – 1420	***Component Replacement & Repair*** *Identifying When Components Need Replacement • Procedures for Replacing Drive Components*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the T were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

Day 5: Friday, 27th of June 2025

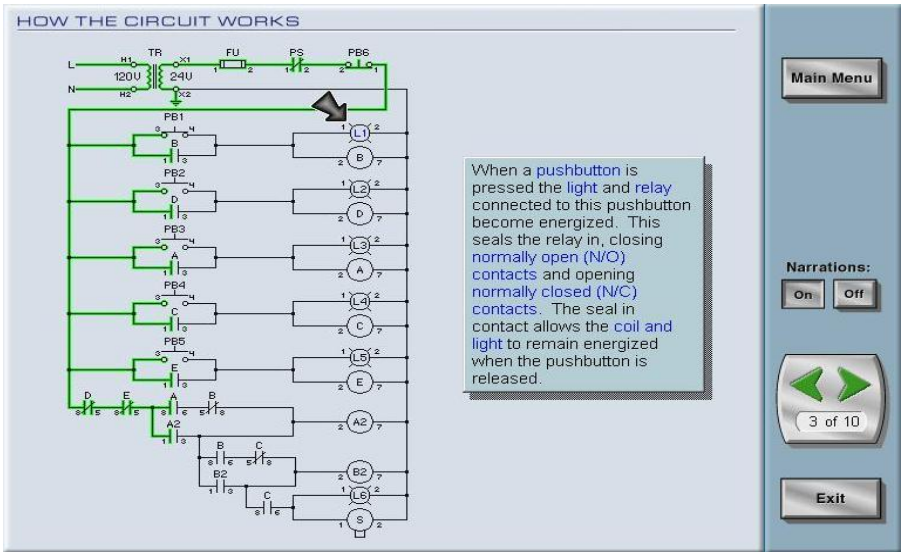
0730 – 0830	***Software Tools for Maintenance*** *Overview of Software Tools for Drive Maintenance • Using Software for Diagnostics & Troubleshooting*
0830 – 0930	***Practical Exercise: Maintenance & Diagnostics*** *Hands-on Session for Performing Maintenance Tasks • Group Discussion on Troubleshooting Scenarios*
0930 – 0945	*Break*
0945 – 1100	***Real-World Troubleshooting Scenarios*** *Analyzing & Resolving Real-World Issues • Group Discussion on Troubleshooting Approaches*
1100 – 1230	***Advanced Applications & Customization*** *Customizing Drives for Specific Marine & Offshore Applications • Case Studies on Advanced Applications*
1230 – 1245	*Break*
1245 – 1345	***Developing Standard Operating Procedures (SOPs)*** *Creating SOPs for Drive Start-up, Maintenance & Troubleshooting • Ensuring Consistency & Quality in Operations*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about t Topics that were Covered During the Course*
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 simulator "Troubleshooting Electrical Circuits V4.1" "Allen Bradley SLC 500", "AB Micrologix 1000 (Digital or Analog)", "AB SLC5/03", "AB WS5610 PLC", "Siemens S7-1200", "Siemens S7-400", "Siemens SIMATIC S7-300", "Siemens S7-200", "GE Fanuc Series 90-30 PLC", "Siemens SIMATIC Step 7 Professional Software", "HMI SCADA" and "PLCLogix 5000 Software".



Basic Techniques



Basic Control Circuits

Motor Control Techniques

Allen Bradley SLC 500 Simulator

Allen Bradley Micrologix 1000 Simulator (Digital)

Allen Bradley Micrologix 1000 Simulator (Analog)

Allen Bradley SLC 5/03

Allen Bradley WS5610 PLC Simulator PLC5

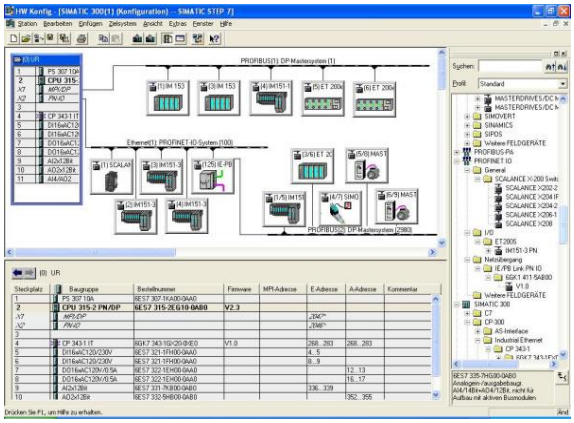
Siemens S7-1200 Simulator

Siemens S7-400 Simulator

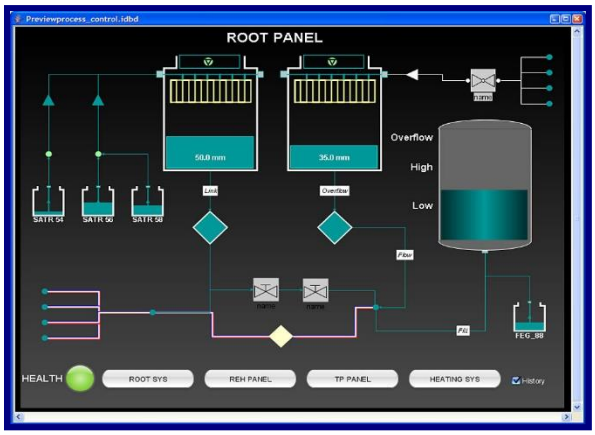
Siemens SIMATIC S7-300

Siemens S7-200 Simulator

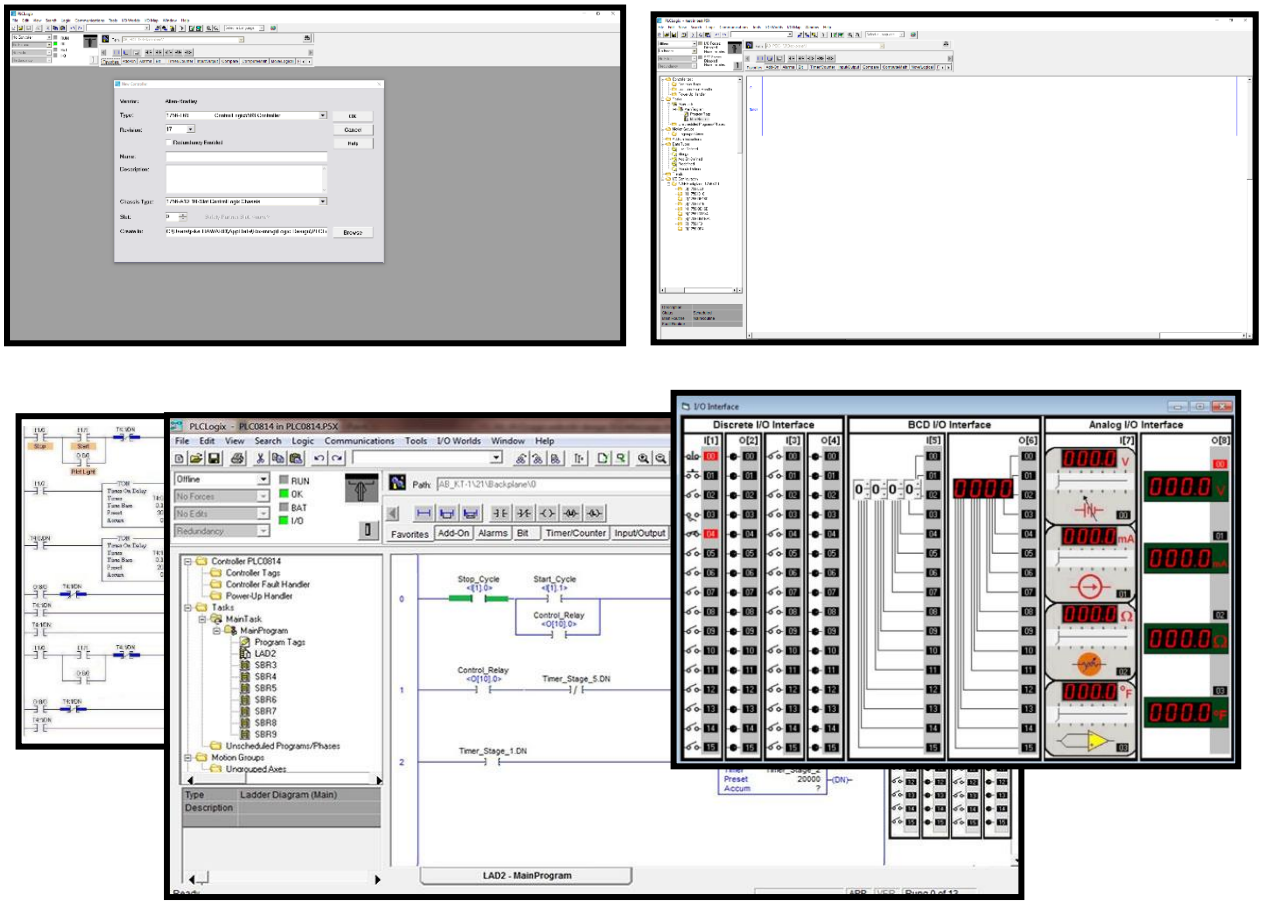
GE Fanuc Series 90-30 PLC Simulator



Siemens SIMATIC Step 7 Professional Software



HMI SCADA



PLCLogix 5000 Software

Course Coordinator

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