Intellects Energy Ltd

TRAINING BROCHURE · INDIVIDUAL TRAINEES · 2026/27

Practical Industrial Training Programmes

Automation & control · Instrumentation · Electrical · Plant operations · Rotating machines. Hands-on courses on real Siemens, Allen-Bradley and multi-brand equipment in Warri, Nigeria.

35	20	95%	19+
courses	PLC models	practical	yrs lead-trainer experience

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About our training

Intellects Energy Ltd is a Warri-based engineering services company (RC 1601164) delivering automation, instrumentation, electrical and calibration services to oil & gas, power, marine and manufacturing clients since 2016. Our training is built from that field work — what you practise in our lab is what you will meet on site.

Courses take trainees from zero experience to intermediate and professional level, typically as 5 days of instructor-led teaching followed by 5 days of supervised practice on the hardware and software.

Lead trainer

TÜV-certified Functional Safety Engineer with 19+ years in industrial automation, PLC/SCADA/DCS and instrumentation in the oil & gas industry. Proficient in over 15 brands and 37 models of PLC/SCADA/DCS/HMI, with a strong record in industrial application, training and mentoring.

Every course includes

- ✓ Training manual (soft + hard copy)
- ✓ Practical lab exercises & example programs
- ✓ Certificate of Proficiency
- ✓ Optional post-training support

Contents

Automation & Control

1. Siemens S7-1200 PLC Programming — TIA Portal 10 days
2. Siemens S7-300 PLC Programming — STEP 7 & TIA Portal 10 days
3. Siemens S7-200 & S7-200 SMART PLC Programming 10 days
4. Siemens HMI — Smart Line / Comfort Panels with WinCC 5 days
5. Allen-Bradley ControlLogix / CompactLogix — Studio 5000 10 + 10 days
6. Allen-Bradley SLC 500 & MicroLogix — RSLogix 500 10 days
7. Allen-Bradley PLC-5 — RSLogix 5 10 days
8. Allen-Bradley Micro820 — Connected Components Workbench 5 – 10 days
9. Allen-Bradley PanelView HMI — FactoryTalk View ME 5 days
10. Other PLC Brands — Mitsubishi, GE, Omron, Schneider, Delta, Keyence & AutomationDirect 10 days per brand

Instrumentation

1. Process Instrumentation, Measurement & Calibration 10 – 30 days
2. Instrumentation & Control with PLC Programming 20 – 40 days
3. Control Valves, Actuators & Positioners 5 – 10 days
4. Gas & Liquid Analyzers — Principles & Maintenance 5 – 15 days
5. Oil & Gas Fiscal Metering Systems 5 – 15 days
6. Safety Instrumented Systems (SIS) — Design & Certification 5 – 10 days
7. Fire & Gas Detection Systems 5 – 10 days
8. Instrumentation Design & Engineering 10 – 20 days

Electrical

1. E&I Fitter — Installation, Hook-up, QA/QC & Pre-Commissioning 10 – 30 days
2. Low-Voltage E&I Commissioning & Maintenance 10 – 20 days
3. Electrical Controls, Wiring & Panel Building 10 – 20 days
4. Power System & Substation Automation 10 – 15 days
5. Home & Building Automation 5 – 10 days

11. PLC / HMI / SCADA Career Pathway — Beginner to Professional 5 – 60 days
12. SCADA Programming — Wonderware (AVEVA) InTouch 10 + 10 days
13. Industrial Communication Protocols & Networking 10 + 10 days
14. Industrial Control System (ICS) Design & Engineering 10 days
15. Electrical, Instrumentation & Controls Technical Drafting 10 days

Plant Operations

1. Control Room Panel Operator (CCPO) 8 – 10 weeks

Rotating Machines

1. Industrial Compressors — Operation & Maintenance 5 – 10 days
2. Industrial Pumps — Operation & Maintenance 5 – 10 days
3. Gas Turbines — Operation & Maintenance 5 – 10 days
4. Electric Motors — Operation & Maintenance 5 – 10 days
5. Electricity Generators — Operation & Maintenance 5 – 10 days
6. Steam & Hydroelectric Turbines 5 – 10 days

PLC, HMI & SCADA equipment in our lab

Siemens

- PLC — **SIMATIC S7-1200** — TIA Portal
- PLC — **SIMATIC S7-300 (CPU 315)** — STEP 7 SIMATIC Manager
- PLC — **SIMATIC S7-300 (CPU 318)** — TIA Portal
- PLC — **SIMATIC S7-200** — STEP 7-MicroWIN
- PLC — **SIMATIC S7-200 SMART**

Allen-Bradley (Rockwell)

- PLC — **ControlLogix 5000** — Studio 5000 / RSLogix 5000
- PLC — **CompactLogix 5000** — Studio 5000 / RSLogix 5000
- PLC — **SLC 500** — RSLogix 500
- PLC — **MicroLogix 1200** — RSLogix 500
- **MicroLogix 1000**

Mitsubishi

- PLC — **FX Series** — GX Works2

MicroWIN SMART

HMI **Smart Line 700 IE / 1000 IE**
WinCC flexible SMART

PLC RSLogix 500

PLC **PLC-5**
RSLogix 5

PLC **Micro820**
Connected Components Workbench

HMI **PanelView 1000**
FactoryTalk View ME

GE Fanuc

PLC **Series 90-30**
Proficy Machine Edition

Omron

PLC **CQM1H**
CX-One / CX-Programmer

Schneider / Modicon

PLC **Twido**
TwidoSoft

PLC **TSX Micro**
PL7

Delta

PLC **DVP Series**
WPLSoft

HMI **DOP-107**
DOPSoft

Keyence

PLC **KV Series**
KV Studio

AutomationDirect

PLC **DirectLOGIC 205/250**
DirectSOFT 5/6

AVEVA (Wonderware)

SCADA **InTouch**
WindowMaker / WindowViewer

Fee schedule — individual trainees

Course	Option	Fee per trainee
Automation & Control		
Siemens S7-1200 PLC Programming — TIA Portal 10 days		**₦550,000**
Siemens S7-300 PLC Programming — STEP 7 & TIA Portal 10 days	S7-300 (STEP 7 or TIA Portal)	**₦750,000**
Siemens S7-200 & S7-200 SMART PLC Programming 10 days	S7-200 (MicroWIN)	**₦400,000**
	S7-200 SMART (MicroWIN SMART)	**₦700,000**
Siemens HMI — Smart Line / Comfort Panels with WinCC 5 days		**₦500,000**
Allen-Bradley ControlLogix / CompactLogix — Studio 5000 10 + 10 days	Level 1 — Beginner	**₦1,250,000**
	Level 2 — Advanced	**₦1,750,000**
Allen-Bradley SLC 500 & MicroLogix — RSLogix 500 10 days	MicroLogix 1000	**₦400,000**
	MicroLogix 1200	**₦550,000**
	SLC 500	**₦750,000**
Allen-Bradley PLC-5 — RSLogix 5 10 days		**₦750,000**
Allen-Bradley Micro820 — Connected Components Workbench 5 – 10 days		**On request**
Allen-Bradley PanelView HMI — FactoryTalk View ME 5 days		**₦500,000**
Other PLC Brands — Mitsubishi, GE, Omron, Schneider, Delta, Keyence & AutomationDirect 10 days per brand	Mitsubishi FX	**₦400,000**
	Omron CQM1H	**₦400,000**
	GE Fanuc 90-30	**₦550,000**
	Other brands	**On request**
PLC / HMI / SCADA Career Pathway — Beginner to Professional 5 – 60 days		**On request**
SCADA Programming — Wonderware (AVEVA) InTouch 10 + 10 days	Level 1 — Beginner	**₦1,500,000**
	Level 2 — Advanced	**₦2,000,000**
Industrial Communication Protocols & Networking 10 + 10 days	Level 1 — Beginner	**₦1,500,000**
	Level 2 — Advanced	**₦2,000,000**
Industrial Control System (ICS) Design & Engineering 10 days		**₦750,000**
	Registration	**₦50,000**
Electrical, Instrumentation & Controls Technical Drafting 10 days		**₦400,000**
Instrumentation		

Course	Option	Fee per trainee
Process Instrumentation, Measurement & Calibration 10 – 30 days		**₦500,000**
Instrumentation & Control with PLC Programming 20 – 40 days		**₦800,000**
Control Valves, Actuators & Positioners 5 – 10 days		**On request**
Gas & Liquid Analyzers — Principles & Maintenance 5 – 15 days		**₦500,000**
Oil & Gas Fiscal Metering Systems 5 – 15 days		**₦500,000**
Safety Instrumented Systems (SIS) — Design & Certification 5 – 10 days		**₦500,000**
Fire & Gas Detection Systems 5 – 10 days		**On request**
Instrumentation Design & Engineering 10 – 20 days		**₦500,000**
Electrical		
E&I Fitter — Installation, Hook-up, QA/QC & Pre-Commissioning 10 – 30 days		**₦500,000**
Low-Voltage E&I Commissioning & Maintenance 10 – 20 days		**₦400,000**
Electrical Controls, Wiring & Panel Building 10 – 20 days		**₦400,000**
Power System & Substation Automation 10 – 15 days		**₦400,000**
Home & Building Automation 5 – 10 days		**₦400,000**
Plant Operations		
Control Room Panel Operator (CCPO) 8 – 10 weeks	Full programme (classroom + simulator)	**₦2,500,000**
Rotating Machines		
Industrial Compressors — Operation & Maintenance 5 – 10 days		**On request**
Industrial Pumps — Operation & Maintenance 5 – 10 days		**On request**
Gas Turbines — Operation & Maintenance 5 – 10 days		**On request**
Electric Motors — Operation & Maintenance 5 – 10 days		**On request**
Electricity Generators — Operation & Maintenance 5 – 10 days		**On request**
Steam & Hydroelectric Turbines 5 – 10 days		**On request**

- Fees are per trainee and cover tuition, lab use, training manual (soft + hard copy), example programs and certificate.
- Your seat is confirmed once payment is received. Payment details are sent with your offer letter.
- Optional coaching / internship and multi-course packages are quoted on request.
- Fees valid for the 2026/27 training year and subject to review.

PLC programme packages

Beginner packages

- 1 PLC: 5 days (+5 days optional coaching)
- 2 PLCs: 10 days (+10)
- 3 PLCs: 15 days (+15)
- Add 1 HMI: +2 days · Add 1 SCADA: +5 days

Beginner → Professional

- Single PLC/HMI/SCADA platform: 40 days
- Multiple platforms: 50 days
- Multiple platforms + industrial networks: 60 days
- Each with up to 30 days optional coaching & internship

Automation & Control

AUTOMATION & CONTROL · SIEMENS

Siemens S7-1200 PLC Programming — TIA Portal

Wire, configure, program and troubleshoot the Siemens S7-1200 in TIA Portal, from your first ladder rung to PID loops and an HMI.

10 days | Beginner → Advanced | Hands-on lab

TRAINING FEE (PER TRAINEE)

Full course **₦550,000**

Software: Siemens TIA Portal (STEP 7 Basic/Professional, WinCC Basic)

Course programme · 5 days instructor-led + 5 days supervised lab practice

Day 1 — PLC fundamentals & hardware

- PLCs in industrial automation; S7-1200 vs S7-1500
- CPU types, selection, DI/DO wiring (24 VDC, sourcing/sinking)
- Scan cycle and operating modes
- TIA Portal tour; first project, hardware configuration and download
- Lab: online monitoring and simple lamp control

Day 2 — Basic programming

- LAD, FBD and STL overview
- NO/NC contacts, coils, set/reset, latching
- Inputs (I), outputs (Q), memory (M); OB1
- Lab: start/stop, seal-in, two-motor interlock, E-stop logic

Day 3 — Timers, counters & analog signals

- IEC timers TON, TOF, TP; counters CTU, CTD
- Analog I/O; scaling 4–20 mA and 0–10 V to engineering units
- INT and REAL data types
- Lab: delayed start, conveyor counting, tank level alarms

Day 4 — Structured & industrial programming

- Functions (FC), Function Blocks (FB), instance & global Data Blocks
- Edge detection, comparison and maths
- Alarm & fault logic; introduction to PID
- Lab: modular motor FB, multi-pump control, PID pressure/temperature loop

Day 5 — HMI, communication & troubleshooting

- KTP Basic Panel set-up, tags, screens and alarms
- Ethernet / PROFINET basics, Modbus mapping, VFD introduction
- Diagnostics, fault finding, upload, backup & restore
- Final project: a mini process plant — pressure, temperature, flow, level and analyzer loops with HMI

Days 6–10: supervised practice

- Self-paced practice on S7-1200 rigs and software
- Trainer support and project review

You will be able to

- ✓ Configure S7-1200 hardware and I/O
- ✓ Write, test and debug LAD/FBD programs with FCs, FBs and DBs
- ✓ Scale analog signals and implement PID control
- ✓ Build and connect a basic HMI
- ✓ Back up, restore and troubleshoot a live PLC

Who should attend

Automation & instrumentation staff, maintenance technicians, electricians, engineers, system integrators and students.

Entry requirements

- ✓ Basic understanding of electrical control systems
- ✓ Comfortable using a Windows PC
- ✓ No previous PLC experience needed

Certificate: Certificate of Proficiency — Siemens S7-1200 TIA Portal Programming

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · SIEMENS

Siemens S7-300 PLC Programming — STEP 7 & TIA Portal

The workhorse of many Nigerian plants. Program the S7-315/318 in classic STEP 7 SIMATIC Manager or in TIA Portal.

10 days | Beginner → Advanced | Hands-on lab

TRAINING FEE (PER TRAINEE)

S7-300 (STEP 7 or TIA Portal) **₦750,000**

Software: STEP 7 SIMATIC Manager or TIA Portal

Course programme · 5 days instructor-led + 5 days supervised lab practice

Day 1 — S7-300 system & hardware

- Racks, CPUs (315/318), power supplies, SM/CP/FM modules
- Addressing, HW Config, MPI/PROFIBUS/Ethernet connections
- Lab: create project, configure rack, download

Day 2 — Logic programming

- LAD/FBD/STL; bit logic, set/reset, edges
- OB1, FCs, FBs and DBs
- Lab: motor control, interlocks, E-stop

Day 3 — Timers, counters, analog & maths

- S5/IEC timers & counters
- Analog scaling (FC105/FC106), comparison and maths
- Lab: tank level and pump control

Day 4 — Advanced functions

- Organisation blocks: cyclic, error and start-up OBs
- PID (FB41) introduction, alarm handling
- Lab: closed-loop control

Day 5 — Diagnostics & project

- Module diagnostics, buffer reading, forcing and online edits
- Upload, compare, archive and restore
- Final project and assessment

Days 6–10: supervised practice

- Self-paced practice on S7-300 rigs

You will be able to

- ✓ Maintain and modify existing S7-300 programs safely
- ✓ Read the diagnostic buffer and clear faults
- ✓ Build structured programs with FCs, FBs and DBs

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Entry requirements

- ✓ Basic electrical control knowledge
- ✓ Comfortable using a Windows PC

Certificate: Certificate of Proficiency — Siemens S7-300 Programming

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · SIEMENS

Siemens S7-200 & S7-200 SMART PLC Programming

Compact Siemens PLCs found on skids, packages and machines. Learn MicroWIN and MicroWIN SMART from scratch.

10 days | Beginner → Intermediate | Hands-on lab

TRAINING FEE (PER TRAINEE)

S7-200 (MicroWIN)	**₦400,000**
S7-200 SMART (MicroWIN SMART)	**₦700,000**

Software: STEP 7-MicroWIN / MicroWIN SMART

Course outline

01 S7-200 / 200 SMART CPU and expansion modules

02 Wiring inputs and outputs

03 MicroWIN project set-up and communication

04 Ladder logic, timers, counters, comparisons

05 Analog modules and scaling

06 Subroutines, interrupts and data handling

07 Text displays / SMART panels overview

08 Troubleshooting, upload and backup

09 Days 6–10: supervised lab practice

You will be able to

- ✓ Program and troubleshoot compact Siemens PLCs on packaged equipment

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Entry requirements

- ✓ Basic electrical knowledge

Certificate: Certificate of Proficiency — Siemens S7-200 / 200 SMART

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · SIEMENS

Siemens HMI — Smart Line / Comfort Panels with WinCC

Design professional operator screens, alarms and trends and connect them to Siemens PLCs.

5 days | Beginner → Intermediate | Hands-on lab

TRAINING FEE (PER TRAINEE)

Full course **₦500,000**

Software: WinCC flexible SMART / WinCC (TIA Portal)

Course outline

01 HMI hardware: Smart 700 IE / 1000 IE, KTP and Comfort panels

02 Creating a project and connecting to the PLC

03 Tags, screens, navigation and faceplates

04 Alarms, trends and user management

05 Recipes and data logging

06 Download, simulation and troubleshooting

You will be able to

- ✓ Build a complete operator interface linked to a live PLC

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — Siemens HMI Programming

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · ALLEN-BRADLEY

Allen-Bradley ControlLogix / CompactLogix — Studio 5000

Rockwell's flagship controllers used across oil & gas. Two progressive levels: Beginner and Advanced.

10 + 10 days | Beginner → Advanced | Hands-on lab

TRAINING FEE (PER TRAINEE)

Level 1 — Beginner	**₦1,250,000**
Level 2 — Advanced	**₦1,750,000**

Software: Studio 5000 / RSLogix 5000, RSLinx Classic, FactoryTalk View ME

Level 1 — Beginner · 10 days (5 instructor-led + 5 practice)

Day 1 — System overview & project set-up

- ControlLogix / CompactLogix architecture and modules
- Studio 5000 environment; RSLinx communication
- Lab: create and download a project

Day 2 — Tags & ladder basics

- Controller vs program tags; BOOL, INT, DINT, REAL, TIMER, COUNTER
- XIC, XIO, OTE, OTL, OTU
- Lab: motor start/stop interlock

Day 3 — Timers, counters & program control

- TON, TOF, RTO; CTU, CTD, RES
- JMP, LBL, MCR
- Lab: sequential process control

Day 4 — I/O configuration & diagnostics

- Digital and analog modules

- Online monitoring, forcing and fault finding
- Lab: configure and test analog I/O

Day 5 — HMI & review

- FactoryTalk View ME screens linked to PLC tags
- Download and run; assessment

Level 2 — Advanced · 10 days (5 instructor-led + 5 practice)

Day 1 — Structured programming

- Tasks, programs and routines
- User-Defined Data Types (UDTs) and Add-On Instructions (AOIs)
- Lab: reusable code with UDTs and AOIs

Day 2 — Advanced instructions & data

- CPT, LIM, comparisons; MOV, COP, FLL
- Arrays and indirect addressing
- Lab: process calculations and scaling

Day 3 — SFC & PID

- Sequential Function Charts: steps and transitions
- PID theory, tuning and optimisation
- Lab: temperature or flow loop

Day 4 — Communication & networking

- EtherNet/IP; produced/consumed tags; MSG instructions
- PLC-to-PLC, PLC-to-HMI and SCADA integration
- Lab: PLC-to-PLC data exchange

Day 5 — Troubleshooting & final project

- Trends, cross-reference, fault recovery and online edits
- Backup, restore and version management
- Final project presentation and evaluation

You will be able to

- ✓ Configure Logix hardware and I/O
- ✓ Program with ladder, SFC, UDTs and AOIs
- ✓ Implement PID and EtherNet/IP communications
- ✓ Diagnose and recover from faults online

Who should attend

Automation & instrumentation engineers, maintenance technicians and supervisors, system integrators, trainers and students.

Entry requirements

- ✓ Basic electrical control knowledge
- ✓ Comfortable using a Windows PC
- ✓ PLC experience helpful but not required for Beginner level

Certificate: Certificate of Proficiency — Allen-Bradley ControlLogix 5000 (Beginner & Advanced)

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · ALLEN-BRADLEY

Allen-Bradley SLC 500 & MicroLogix — RSLogix 500

Still running thousands of machines and skids. Learn MicroLogix 1000/1200 and SLC 500 with RSLogix 500.

10 days | Beginner → Intermediate | Hands-on lab

TRAINING FEE (PER TRAINEE)

MicroLogix 1000	**₦400,000**
MicroLogix 1200	**₦550,000**
SLC 500	**₦750,000**

Software: RSLogix 500, RSLinx Classic

Course outline

01 MicroLogix 1000/1200 and SLC 500 hardware and addressing

02 RSLinx drivers and going online

03 Data files: O, I, S, B, T, C, R, N, F

04 Bit, timer, counter and compare instructions

05 Analog I/O and SCL scaling

06 Subroutines, sequencers and data moves

07 Fault codes, forcing and troubleshooting

08 Upload, backup and documentation

09 Days 6–10: supervised lab practice

You will be able to

- ✓ Support and modify legacy Allen-Bradley PLC systems with confidence

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — RSLogix 500

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · ALLEN-BRADLEY

Allen-Bradley PLC-5 — RSLogix 5

For engineers maintaining legacy PLC-5 systems in refineries, plants and terminals.

10 days | Intermediate | Hands-on lab

TRAINING FEE (PER TRAINEE)

Full course **₦750,000**

Software: RSLogix 5, RSLinx Classic

Course outline

01 PLC-5 chassis, processors and I/O

02 Data Highway+ and RIO concepts

03 Instruction set and file structure

04 Block transfers and analog I/O

05 Fault finding and processor status file

06 Migration considerations (PLC-5 → ControlLogix)

07 Days 6–10: supervised lab practice

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — RSLogix 5

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · ALLEN-BRADLEY

Allen-Bradley Micro820 — Connected Components Workbench

Modern micro controller programming with Rockwell's free CCW software.

5 – 10 days | Beginner | Hands-on lab

TRAINING FEE (PER TRAINEE)

Fee **On request**

Software: Connected Components Workbench (CCW)

Course outline

01 Micro800 family and Micro820 hardware

02 CCW projects, variables and data types

03 Ladder, function block and structured text

04 Timers, counters, analog and PID

05 Modbus and Ethernet communication

06 Troubleshooting and backup

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — Micro820 / CCW

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · ALLEN-BRADLEY

Allen-Bradley PanelView HMI — FactoryTalk View ME

Design PanelView operator screens and connect them to Logix and SLC controllers.

5 days | Beginner → Intermediate | Hands-on lab

TRAINING FEE (PER TRAINEE)

Full course **₦500,000**

Software: FactoryTalk View Studio ME

Course outline

01 PanelView hardware (PanelView 1000 / Plus)

02 Creating an application and communication set-up

03 Tags, displays, navigation and global objects

04 Alarms, trends and security

05 Runtime files, download and troubleshooting

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — FactoryTalk View ME

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · MULTI-BRAND

Other PLC Brands — Mitsubishi, GE, Omron, Schneider, Delta, Keyence & AutomationDirect

Choose any brand from our lab. Same practical structure: hardware, programming, analog, HMI link and troubleshooting.

10 days per brand | Beginner → Intermediate | Hands-on lab

TRAINING FEE (PER TRAINEE)

Mitsubishi FX	**₦400,000**
Omron CQM1H	**₦400,000**
GE Fanuc 90-30	**₦550,000**
Other brands	**On request**

Software: GX Works2, Proficy Machine Edition, CX-One, Twido/PL7, WPLSoft/DOPSoft, KV Studio, DirectSOFT

Course outline

01 Mitsubishi FX series — GX Works2

02 GE Fanuc 90-30 — Proficy Machine Edition

03 Omron CQM1H — CX-One / CX-Programmer

04 Schneider/Modicon Twido & TSX Micro — Twido Soft / PL7

05 Delta DVP PLC & DOP-107 HMI — WPLSoft / DOPSoft

06 Keyence KV series — KV Studio

07 AutomationDirect DirectLOGIC — DirectSOFT 5/6

08 Each course: 5 days instructor-led + 5 days supervised practice

You will be able to

- ✓ Become productive on the exact PLC brand your plant uses

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency in the chosen brand

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · MULTI-BRAND

PLC / HMI / SCADA Career Pathway — Beginner to Professional

Combine several PLC brands with HMI and SCADA in one programme, with optional coaching and internship. Use the package builder below to plan yours.

5 – 60 days | Beginner → Professional | Hands-on lab + internship

TRAINING FEE (PER TRAINEE)

Fee **On request**

Course outline

01 1, 2 or 3 PLC brands (5 / 10 / 15 days)

02 Add one HMI (+2 days) or one SCADA (+5 days)

03 Professional track, single platform: 40 days

04 Professional track, multiple platforms: 50 days

05 Professional track + industrial networks: 60 days

06 Optional coaching equal to course length (up to 30 days incl. internship)

You will be able to

- ✓ Graduate with a portfolio of working projects across multiple platforms

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency listing every platform completed

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · AVEVA

SCADA Programming — Wonderware (AVEVA) InTouch

Build a complete SCADA application: graphics, alarms, trends, historian and PLC communication. Beginner and Advanced levels.

10 + 10 days | Beginner → Advanced | Hands-on lab

TRAINING FEE (PER TRAINEE)

Level 1 — Beginner	**₦1,500,000**
Level 2 — Advanced	**₦2,000,000**

Software: Wonderware / AVEVA InTouch, OPC / I/O servers

Course outline

01 SCADA architecture and the role of HMI/SCADA in plants

02 InTouch WindowMaker & WindowViewer; tagname dictionary

03 Process graphics, animation links and mimic diagrams

04 Alarms, events and alarm management (ISA 18.2 concepts)

05 Real-time and historical trends

06 Scripting and security

07 PLC/DCS communication via OPC and I/O servers

08 Advanced: redundancy, reporting, historian integration

09 Final project: tank farm, oil & gas separation, packaging line or power plant monitoring system

You will be able to

- ✔ Design, build and commission a working SCADA application

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — Wonderware InTouch SCADA

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · NETWORKS

Industrial Communication Protocols & Networking

Design, configure, troubleshoot and secure the networks that connect PLCs, DCS, SCADA, HMIs and field devices.

10 + 10 days | Beginner → Advanced | Hands-on lab

TRAINING FEE (PER TRAINEE)

Level 1 — Beginner	**₦1,500,000**
Level 2 — Advanced	**₦2,000,000**

Software: Studio 5000, TIA Portal, FactoryTalk View, Kepware OPC, Modbus Poll, Wireshark

Level 1 — Beginner · 10 days (5 instructor-led + 5 practice)

Day 1 — Fundamentals

- ICS architecture; Purdue model levels 0–5
- Switches, routers, gateways, firewalls, fibre and media converters
- OSI/TCP-IP, IP addressing, subnets, VLAN basics
- Lab: cable termination, PC addressing, ping and basic troubleshooting

Day 2 — Industrial protocols

- RS-232/422/485 serial networks
- Modbus RTU/TCP, EtherNet/IP, PROFINET, PROFIBUS DP/PA, Foundation Fieldbus, DeviceNet, CANopen, HART
- Choosing protocols for oil & gas, manufacturing, power, water
- Lab: Modbus devices and RS-485 wiring

Day 3 — PLC / DCS / SCADA integration

- PLC-to-PLC, HMI, SCADA, VFD and remote I/O links
- OPC DA/UA, MQTT introduction
- Lab: connect PLC to SCADA, configure OPC server, read/write live tags

Day 4 — Network design & troubleshooting

- Star, ring and redundant topologies; latency, polling, scan time
- Duplicate IPs, wrong subnets, cable/fibre faults, RS-485 noise
- Lab: diagnose comms loss with ping, tracert, LEDs and Wireshark

Day 5 — Applications & cybersecurity

- Case studies: flow station, compressor station, tank farm, production line, power plant
- IEC 61850, DNP3 overview; IEC 62443 cybersecurity basics
- Capstone: design, address, integrate and troubleshoot a small ICS network

Level 2 — Advanced · 10 days (5 instructor-led + 5 practice)

Day 1 — Advanced Ethernet architecture

- ISA-95, IEC 62443 zones, OT vs IT
- EtherCAT, POWERLINK, CC-Link IE overview
- Managed switches, VLANs, QoS, port mirroring, IGMP snooping, ring redundancy

Day 2 — Advanced protocols

- CIP explicit/implicit messaging, DLR
- PROFINET RT/IRT, GSD files, device naming
- Modbus mapping & gateways; OPC UA security
- DNP3, IEC 60870-5-104, IEC 61850, HART-IP

Day 3 — PLC / DCS / SCADA integration

- Peer-to-peer messaging across brands
- DCS controller redundancy and remote I/O
- Historian, alarm server and database links

Day 4 — Security & resilience

- Segmentation, firewalls, remote access
- Backup, recovery and hardening

Day 5 — Final project

- Design and commission a secure multi-vendor network

You will be able to

- ✓ Configure IP networks for automation systems
- ✓ Apply Modbus, PROFINET, EtherNet/IP, PROFIBUS, HART and OPC UA
- ✓ Diagnose communication faults methodically
- ✓ Apply basic industrial cybersecurity

Who should attend

Maintenance and automation staff, instrument engineers, PLC technicians, control room operators, electrical engineers, commissioning engineers and students.

Entry requirements

- ✓ Basic electrical control knowledge
- ✓ Comfortable using a Windows PC

Certificate: Certificate of Proficiency — Industrial Communication & Networking

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · ENGINEERING

Industrial Control System (ICS) Design & Engineering

From concept to commissioning: design PLC, DCS, SCADA and HMI systems and produce real EPC engineering deliverables.

10 days | Advanced | 95% practical

TRAINING FEE (PER TRAINEE)

Full course	**₦750,000**
Registration	**₦50,000**

Software: AutoCAD Electrical & P&ID, EPLAN, AVEVA Instrumentation, TIA Portal, Studio 5000, EcoStruxure, InTouch, WinCC, FactoryTalk View, OPC UA

Course programme · 5 days instructor-led + 5 days supervised practice

Day 1 — ICS design fundamentals

- ICS architecture, ISA-95 levels and lifecycle
- Process control fundamentals and PID
- Oil & gas and power plant processes
- URS, FDS, design basis and philosophy

Day 2 — Instrumentation & control engineering

- Instrument selection, sizing and datasheets
- Loop and hook-up drawings, instrument index, cable and JB schedules
- P&IDs, ISA symbols, cause & effect
- PLC/DCS cabinets, marshalling and UPS

Day 3 — PLC, DCS & SCADA integration

- CPU sizing, I/O calculation, remote I/O and redundancy
- DCS architecture, alarm philosophy, historians
- PLC–DCS interface and SCADA integration
- Network design: EtherNet/IP, Modbus, PROFINET, FF, HART, OPC UA, IEC 61850, DNP3

Day 4 — Logic, safety, reliability & cybersecurity

- Sequential, batch, start-up and shutdown logic
- ESD, F&G, SIS and SIL concepts
- Redundant controllers, networks and servers

- IEC 62443 security

Day 5 — Complete design project

- FDS, I/O list, instrument index, cable schedule, network and architecture drawings, FAT/SAT
- Design an oil & gas or power plant control system
- Team presentation and assessment

You will be able to

- ✓ Design complete control systems from concept to commissioning
- ✓ Produce FDS, I/O lists, loop drawings, C&E matrices and network drawings
- ✓ Apply ISA 18.2, IEC 61511, IEC 61131-3, IEC 62443 principles

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — ICS Design & Engineering

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

AUTOMATION & CONTROL · ENGINEERING

Electrical, Instrumentation & Controls Technical Drafting

Produce professional EI&C drawing packages: SLDs, loop diagrams, hook-ups, PLC/DCS interface and SCADA architecture drawings.

10 days | Beginner → Intermediate | Computer lab (95% practical)

TRAINING FEE (PER TRAINEE)

Full course **₦400,000**

Software: AutoCAD Electrical, EPLAN, SmartPlant Instrumentation, Microsoft Visio

Course programme · 5 days instructor-led + 5 days supervised practice

Day 1 — Drafting fundamentals

- Drawing types: SLD, wiring, loop, hook-up, cable schedules, panel layouts
- IEC/ANSI/ISA standards, tag numbering, revision control
- Lab: lighting & power SLD, symbol legend

Day 2 — Electrical drafting

- MCC, motor starters, UPS, transformers, earthing, hazardous area

- Panel GA and internal wiring; cable schedules and terminations
- Lab: motor control circuit and MCC feeder

Day 3 — Instrumentation drafting

- Location plans, hook-ups, tubing and instrument air
- Analog, digital, valve and shutdown loops
- Lab: transmitter loop, valve hook-up, JB termination

Day 4 — PLC/DCS interface & SCADA

- PLC I/O wiring, interposing relays, remote I/O
- Marshalling and cross-wiring; network architecture
- Lab: PLC I/O sheet, DCS marshalling, SCADA network

Day 5 — QA/QC & project documentation

- As-builts, redlines, multi-sheet projects
- Drawing verification checklists
- Final project: complete drawing package

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency — EI&C Technical Drafting

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

Instrumentation

INSTRUMENTATION

Process Instrumentation, Measurement & Calibration

Pressure, level, flow and temperature — how each is measured, installed, calibrated and certified.

10 – 30 days | Beginner → Advanced | Calibration lab

TRAINING FEE (PER TRAINEE)

Full course **₦500,000**

Course outline

01 Instrument basics, signals (4–20 mA, HART) and P&IDs

02 Pressure: gauges, switches, transmitters

03 Level: DP, radar, guided wave, displacer, ultrasonic

04 Flow: orifice, magnetic, vortex, Coriolis, turbine

05 Temperature: RTDs, thermocouples, transmitters

06 Calibration with deadweight testers, process calibrators & HART communicators

07 Calibration certificates, uncertainty and records

You will be able to

- ✓ Calibrate and certify common field instruments
- ✓ Read and work from P&IDs and loop diagrams

Who should attend

Instrument technicians, fresh graduates, E&I fitters, maintenance staff.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

INSTRUMENTATION

Instrumentation & Control with PLC Programming

A combined track: field instruments in the morning, the PLC logic that uses them in the afternoon.

20 – 40 days | Beginner → Advanced | Hands-on lab

TRAINING FEE (PER TRAINEE)

Full course **₦800,000**

Course outline

01 Field instrumentation and calibration

02 Control loops and PID tuning

03 PLC programming on Siemens or Allen-Bradley (or another brand from our lab)

04 Interfacing transmitters, switches and valves to PLC I/O

05 Loop checks and troubleshooting

06 Mini-project: a complete instrumented control loop

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

INSTRUMENTATION

Control Valves, Actuators & Positioners

Inspect, calibrate, test and certify control valves — the same work we deliver for operators in the field.

5 – 10 days | Intermediate | Workshop

TRAINING FEE (PER TRAINEE)

Fee — **On request**

Course outline

01 Valve types, trims and characteristics

02 Pneumatic and electric actuators

03 Smart positioners: set-up and auto-calibration

04 Stroke, seat-leak and bench testing

05 Shutdown valves and partial-stroke testing

06 Test records and certification

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

INSTRUMENTATION

Gas & Liquid Analyzers — Principles & Maintenance

Operating principles, sampling systems, calibration gases and upkeep of process and safety analyzers.

5 – 15 days | Intermediate → Advanced | Classroom + lab

TRAINING FEE (PER TRAINEE)

Full course — **₦500,000**

Course outline

01 pH, conductivity, dissolved oxygen, turbidity

02 Gas chromatographs and moisture analyzers

03 O2, CO, CO2, H2S and hydrocarbon detection

04 Sample conditioning systems

05 Calibration gases and procedures

06 Analyzer house and preventive maintenance

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

INSTRUMENTATION

Oil & Gas Fiscal Metering Systems

Custody-transfer measurement: metering skids, provers, flow computers and audit-ready reporting.

5 – 15 days | Advanced | Classroom + lab

TRAINING FEE (PER TRAINEE)

Full course ₦500,000

Course outline

01 Fiscal metering principles and standards (API/AGA/ISO overview)

02 Ultrasonic, turbine and Coriolis meters

03 Provers and meter proving

04 Flow computers and configuration

05 Sampling, density and quality measurement

06 Reporting, audits and uncertainty

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

INSTRUMENTATION

Safety Instrumented Systems (SIS) — Design & Certification

Delivered by a TÜV-certified Functional Safety Engineer. Lifecycle, SIL and practical SIS engineering.

5 – 10 days | Advanced | Classroom

TRAINING FEE (PER TRAINEE)

Full course **₦500,000**

Course outline

01 IEC 61511 / IEC 61508 safety lifecycle

02 HAZOP, LOPA and SIL determination

03 SIF design, architecture and voting

04 SIL verification and proof testing

05 ESD, F&G and interlock logic

06 Bypass management and operations

You will be able to

- ✓ Take part in SIL studies and SIS projects
- ✓ Prepare for recognised functional safety certification

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

INSTRUMENTATION

Fire & Gas Detection Systems

Detectors, panels and cause-and-effect logic that protect people and plant.

5 – 10 days | Intermediate | Classroom + lab

TRAINING FEE (PER TRAINEE)

Fee **On request**

Course outline

01 Flame, heat, smoke and gas detection technologies

02 Detector placement and mapping concepts

03 F&G panels and logic solvers

04 Bump testing and calibration

05 Cause & effect testing

06 Maintenance and records

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

INSTRUMENTATION

Instrumentation Design & Engineering

Datasheets, sizing, hook-ups and documentation used on real EPC projects.

10 – 20 days | Advanced | Classroom

TRAINING FEE (PER TRAINEE)

Full course **₦500,000**

Course outline

01 Instrument index and datasheets

02 Flow element, control valve and relief sizing basics

03 Hook-up and installation drawings

04 Loop diagrams and termination schedules

05 Cable and junction box schedules

06 Design reviews and as-builts

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

Electrical

ELECTRICAL

E&I Fitter — Installation, Hook-up, QA/QC & Pre-Commissioning

Job-ready skills for site: tubing, cabling, terminations, inspection and test packs.

10 – 30 days | Beginner → Advanced | Workshop + site

TRAINING FEE (PER TRAINEE)

Full course **₦500,000**

Course outline

01 Site safety, permits and tools

02 Instrument tubing, bending and compression fittings

03 Cable glanding, routing and termination

04 Hook-up to transmitters, valves and JBs

05 Insulation resistance and continuity testing

06 Loop checks and pre-commissioning

07 QA/QC inspection test plans and check sheets

You will be able to

- ✓ Work confidently as an E&I fitter on oil & gas sites

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ELECTRICAL

Low-Voltage E&I Commissioning & Maintenance

Commission and maintain LV distribution, motors and instrument systems safely.

10 – 20 days | Intermediate | Workshop

TRAINING FEE (PER TRAINEE)

Full course **₦400,000**

Course outline

01 LV switchgear, MCCs and distribution boards

02 Protection devices and coordination

03 Motor starters, VFDs and soft starters

04 Earthing and lightning protection

05 Testing instruments and procedures

06 Preventive and corrective maintenance plans

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ELECTRICAL

Electrical Controls, Wiring & Panel Building

Design, build and test control panels — the same way we fabricate them for clients.

10 – 20 days | Beginner → Advanced | Workshop

TRAINING FEE (PER TRAINEE)

Full course ₦400,000

Course outline

01 Reading control schematics

02 Relays, contactors, timers and interlocks

03 DOL, star-delta and reversing starters

04 Panel layout, ferruling and labelling

05 PLC and VFD integration

06 Panel testing and handover

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ELECTRICAL

Power System & Substation Automation

Protection, control and IEC 61850-based automation for industrial substations.

10 – 15 days | Advanced | Classroom + lab

TRAINING FEE (PER TRAINEE)

Full course ₦400,000

Course outline

01 Substation layouts and equipment

02 Protection relays and settings

03 IEC 61850 concepts and IEDs

04 SCADA for power systems

05 Interlocking and switching procedures

06 Testing and maintenance

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ELECTRICAL

Home & Building Automation

Smart lighting, access, security and energy control for homes and offices.

5 – 10 days | Beginner | Workshop

TRAINING FEE (PER TRAINEE)

Full course ₦400,000

Course outline

01 Domestic wiring standards refresher

02 Smart switches, sensors and controllers

03 Solar/inverter integration basics

04 CCTV and access control

05 Apps, scheduling and scenes

06 Installation and client hand-over

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

Plant Operations

PLANT OPERATIONS

Control Room Panel Operator (CCPO)

Foundation-to-advanced programme that builds operators who keep plants safe, stable and efficient — in normal, abnormal and emergency conditions.

8 – 10 weeks | Beginner → Advanced | Classroom + simulator

TRAINING FEE (PER TRAINEE)

Full programme (classroom + simulator) **₦2,500,000**

Course outline

01 Control room operations fundamentals, SOPs, permits & shift handover

02 Process plant & instrumentation fundamentals (PFDs, P&IDs, 4–20 mA, HART)

03 DCS, SCADA & HMI operation with simulator practice

04 Process control & control-loop operation (PID, modes, cascade)

05 Process monitoring & alarm management

06 Equipment operation, start-up & shutdown

07 ESD, SIS, interlocks & process safety (IEC 61511 principles)

08 Troubleshooting & abnormal situation management

09 Advanced operations, communication & optimisation

10 Simulator scenarios, final practical & certification

You will be able to

- ✓ Operate DCS/HMI and respond correctly to alarms
- ✓ Carry out simulated start-ups, shutdowns and ESD responses
- ✓ Earn the Certified Control Room Panel Operator (CCPO) certificate (70% pass mark)

Who should attend

Panel/console operators, process & field operators, technicians, supervisors and engineers moving into operations.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

Rotating Machines

ROTATING MACHINES

Industrial Compressors — Operation & Maintenance

Reciprocating, centrifugal and screw compressors: how they work, how they fail and how to keep them running.

5 – 10 days | Beginner → Advanced | Classroom + workshop

TRAINING FEE (PER TRAINEE)

Fee **On request**

Course outline

01 Compressor types and performance curves

02 Surge, anti-surge and capacity control

03 Lubrication, seals and auxiliaries

04 Protection and shutdown systems

05 Condition monitoring (vibration, temperature)

06 Troubleshooting and overhaul planning

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ROTATING MACHINES

Industrial Pumps — Operation & Maintenance

Centrifugal and positive-displacement pumps from basics to reliability engineering.

5 – 10 days | Beginner → Advanced | Classroom + workshop

TRAINING FEE (PER TRAINEE)

Fee — **On request**

Course outline

01 Pump types, curves and system curves

02 NPSH and cavitation

03 Mechanical seals and bearings

04 Alignment and vibration

05 Start-up, shutdown and protection

06 Root-cause failure analysis

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ROTATING MACHINES

Gas Turbines — Operation & Maintenance

For staff on power plants, compressor stations, FPSOs and LNG facilities.

5 – 10 days | Intermediate → Advanced | Classroom

TRAINING FEE (PER TRAINEE)

Fee — **On request**

Course outline

01 Brayton cycle and turbine sections

02 Fuel, lube oil and starting systems

03 Turbine control and protection

04 Start-up, loading and shutdown sequences

05 Borescope and condition monitoring

06 Maintenance intervals and overhauls

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ROTATING MACHINES

Electric Motors — Operation & Maintenance

Selection, installation, commissioning, troubleshooting and predictive maintenance of industrial motors.

5 – 10 days | Beginner → Intermediate | Workshop

TRAINING FEE (PER TRAINEE)

Fee **On request**

Course outline

01 AC/DC motor principles

02 Nameplates, selection and sizing

03 Installation, alignment and commissioning

04 Starters and VFDs

05 Insulation, vibration and thermography testing

06 Rewind vs replace decisions

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ROTATING MACHINES

Electricity Generators — Operation & Maintenance

Diesel and gas gensets for oil & gas, factories, commercial sites and utilities.

5 – 10 days | Beginner → Intermediate | Workshop

TRAINING FEE (PER TRAINEE)

Fee **On request**

Course outline

01 Generator and AVR principles

02 Engines, fuel and cooling systems

03 Synchronising and load sharing

04 Protection and control panels

05 Routine servicing and testing

06 Fault diagnosis

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

ROTATING MACHINES

Steam & Hydroelectric Turbines

Operation, control, inspection and maintenance of steam and hydro turbine systems.

5 – 10 days | Intermediate → Advanced | Classroom

TRAINING FEE (PER TRAINEE)

Fee **On request**

Course outline

01 Steam cycle and turbine construction

02 Hydro turbine types (Francis, Kaplan, Pelton)

03 Governors and control

04 Protection and trip systems

05 Inspection and condition monitoring

06 Major overhauls and reliability

Who should attend

Technicians, engineers, graduates, operators and career-changers entering industry.

Certificate: Certificate of Proficiency issued by Intellects Energy Ltd

Includes: training manual (soft + hard copy), lab exercises, example programs, optional post-training support

Schedule: Mon–Fri, 9:00 am – 4:00 pm · Venue: Liberty Estate, Opete, Warri

How to register

1. Register online at **intellectsenergyltd.com/register.html**, or WhatsApp **+234 805 120 3632**, or email **training@intellectsenergyltd.com**.
2. Receive your offer letter with class date, fee and payment details within one working day.
3. Pay to confirm your seat and start training at Block F, Plot 14, Liberty Estate, Opete, off DSC Expressway, Warri, Delta State.

Company-sponsored? Ask for our corporate training brochure.