

HONEYWELL ACADEMY

**STUDENT TRAINING
PROGRAM**

Honeywell



PROGRAM DETAILS

WHO SHOULD ATTEND?

- Students from Engineering Degree or Diploma (Suitable Semester of Second, Third or Last year)
- Fresh Graduated Engineers without any prior working experience who desire an overview and first practice on Honeywell DCS system and PLC controller
- Working individuals are not eligible to this training program

PROGRAM OBJECTIVES

- Be Industry Ready - Experience the world class process Automation system
- Plant Visit for holistic learning experience
- Develop a thought process and relate classroom learning with plant scenarios
- Hands on Experience on Honeywell Automation Products & Solutions

PROGRAM EXECUTION

- The entire program will be managed by Honeywell Academy, India
- The 4 weeks program is designed to deliver a holistic learning experience
- The course is delivered by certified instructors having diverse teaching experience
- The participants will get an opportunity to hands-on with the latest automation tools and technology and Honeywell factory visit



CURRICULUM DETAILS – INDUSTRIAL AUTOMATION - INSTRUMENTATION AND PROCESS CONTROL

Training curriculum for students is designed considering modern Process Control System in the Industry. The Training / Workshop shall include extensive hands-on experience on Honeywell PLC / DCS. Every participant shall get access to pre-installed Engineering Workstation for lab exercises and tests throughout the Workshop.

Attendance records shall be maintained for each module.

The participant will go through Three (3) Assessment Exams to get the Learning completion certification.

Module Options:

Students and college may choose amongst the offered modules and request for a customized curriculum. However, this curriculum should be of minimum one week in duration.

WEEK 1

- Module 1: O&G Industry Overview (1.5 Days)
- Module 2: E.H.S (0.5 Day)
- Module 3: Instrumentation: Process and Instrumentation Drawings(0.5 Day)
- Process Control (Days)
- Module 4: Evolution of DCS (Journey till Control and I/O HIVE) (1 Day)
- Assessment Exam - 1

WEEK 2 & WEEK3 - WORKSHOP

- Module 1: PLC (Control Edge) and SCADA Workshop (3 Days)
- Module 2 : DCS - Honeywell Experion PKS Workshop (5 Days)
- Module 3: HMI workshop (1 Day)
- Assessment Exam - 2
- Module 4: Honeywell Factory/Plant Visit (1 Day)

WEEK 4

- Module 1: Introduction to Networking (1 Day)
- Module 2: Introduction to Cyber Security (1 Day)
- Module 3: Introduction to Virtualization (1 Day)
- Module 4: Introduction to Honeywell Forge-Industrial IoT Analytics Platform (1 Day)
- Module 5: Introduction to OneWireless™ Network (1 Day)
- Assessment Exam - 3
- Certification

MODE OF DELIVERY & FEE DETAILS

Mode of Delivery Options:

- Honeywell campus Classroom Training - Training delivery by trainer in Honeywell facilities in Pune. It also includes one day visit to plant/Honeywell Factory.
- Institute / College in-campus - Training delivery by Honeywell Trainer in your facility. It does not include one day visit to plant. Instead, a virtual plant demonstration will be conducted.
- Virtual Instructor Led training – Training delivered by Honeywell trainer over MS-Teams. It does not include one day visit to plant. Instead, a virtual plant demonstration will be conducted.

Fee/Commercial Details:

- Fee across all three modes of delivery is same.
- Fee to be paid at least 15 days in advance.
- In case college nominates a batch, PO to be issued by College. There must be an agreement/MoU between Honeywell and second party to proceed further.
- In case an individual student registers for a course, DD to be issued in the name of Honeywell Automation India Ltd.

WEEK 1

Module1: Overview of Oil, Gas, Refining, and Petrochemical

S no.	Topic Title	Description	Duration (Hrs.)
1	Oil and Gas Production Overview	In this first program in the series, trainees will learn about the basic geology and fluid science of oil and gas production, including liquid separation. Trainees will also learn about well equipment and oil and gas processing systems. This program is designed for trainees who require a basic understanding of offshore oil and gas production, processing and equipment.	3
2	Offshore Systems	In Offshore Systems, you will learn about the Offshore Industry including its history, types of offshore structures, topside facilities, subsea system and field architecture; fixed offshore platforms including advantages, applications and characteristics of steel jacket platforms, compliant tower platforms, gravity based structures and jack-up platforms; floating production structures including advantages, applications and characteristics of semisubmersibles, tension leg platforms (TLP), spars, and ships.	3
3	Subsea Systems	In Subsea Systems, you will learn about the history and application of subsea systems and subsea wells; the characteristics of various subsea equipment including subsea tree systems, chokes, manifolds, control systems, connection systems, subsea flowlines and laying methods, risers, jumpers, umbilical, and remotely operated vehicles.	3
4	Fundamentals of Refining	In Fundamentals of Refining, you will learn about the refining industry as part of the downstream petroleum value chain including characteristics of crude oil and the refining products made from it, refining economics, a typical refinery configuration with its process streams and units.	2
5	Introduction to the Petrochemical Industry	In Introduction to the Petrochemical Industry, you will learn about the processes and equipment that make up the petrochemical industry. You will be introduced to petrochemical products, including plastics, resins, fibers, and foams; base chemicals and their derivatives, and primary petrochemical feedstocks. You will also review petrochemical chemistry and learn about petrochemical economic drivers. Finally, you will learn about petrochemical manufacturing, including refinery and chemical processes, such as cat cracking, reforming, isomerization, steam cracking, and extraction.	2
6	Pipelines and Storage Systems	In Pipelines and Storage Systems, you will learn about the different hydrocarbon transportation systems, advantages of pipelines, pipeline projects, pipeline construction and types of pipelines; pipeline system design and components; pipeline problems and protection; and pigging. In addition, you will learn about hydrocarbon storage systems for liquids and gases, including appropriate types of tank designs and use of depleted reservoirs and salt caverns.	2

WEEK 1

Module 2: EHS (Environmental, Health and Safety)

S no.	Topic Title	Description	Duration (Hrs.)
1	Emergency Action Plans, Alarm Systems, and Fire Prevention Plans	Emergency Action Plans, Alarm Systems, and Fire Prevention Plans is designed to help you meet the training requirements of OSHA 29 CFR 1910.38 and OSHA 29 CFR 1910.165. It covers what employees must do during an emergency to protect themselves, emergency alarms, evacuation procedures, fire hazards and fire protection equipment and systems.	1
2	Hazwoper: Awareness	Hazwoper: Awareness is designed to help you meet the training requirements of 29 CFR 1910.120. It covers information mandated by the standard, including what hazard materials are, and how to approach them during an incident. Also covered are methods for detecting and identifying hazardous materials and how to use the DOT emergency response guidebook.	1.5
3	Refinery Process Overview: Refinery Process Hazards	In this program, you will learn about refining operations and the hazards they pose. You will also be introduced both simple and complex refineries and gain a basic understanding of the systems within these facilities.	4

WEEK 1

Module3: Process Control

S no.	Topic Title	Description	Duration (Hrs.)
1	Instrumentation: Process and Instrumentation Drawings	A company may have several production processes. Having uniform standards for instrumentation systems used for measurement and control simplifies and helps explain the process. In this program, you will learn standard symbols used in instrumentation systems how to apply them.	2
2	Measurement and Calibration Basics	In Measurement and Calibration Basics, you will learn about measurement technology, including range, span, turndown ratio, accuracy, repeatability, linearity, resolution, hysteresis, error, measured and actual values; measurement devices, calibration terminology and equipment, and safety.	2
3	Control Systems - SCADA, DCS and ESD	In Control Systems - SCADA, DCS and ESD, you will learn about control systems and basic feedback control; distributed control systems (DCS), including field I/O, process controllers, communications, redundancy, and operations; supervisory control and data acquisition (SCADA) systems, including field I/O, master and remote stations, along with their associated software components; and Emergency Shutdown Systems (ESD).	2
4	Network and Communication Systems	In Network and Communications, you will learn about communication networks, transmission modes, encoding, communication speeds, data error detection, common industrial communication standards and protocols, including HART, FOUNDATION Fieldbus, Modbus, and Profibus / PROFINET networks.	1.5
5	Safety in Instrumentation and Control Systems	In Safety in Instrumentation and Control Systems, you will learn about emergency shutdown systems, standards, safety system technologies, SIS architecture; system integrity levels (SIL), equipment failure modes and analysis, SIS factors, and procedures for overriding ESD and SIL systems.	3
6	Process Control Tests	Process Control Tests is designed to provide trainees with knowledge about how process control tests are used to aid in the production of high-quality products. You will learn about common tests — what they are, when they are used, and what the tests results mean. You will learn why products are tested, the different kinds of tests, how to obtain a good sample, and to interpret test results. You will also learn some of the more common physical tests, how they are run, what the results mean and how you can use these results as an operating tool. Also covered are some of the more common impurities found in petroleum products, how these impurities affect product quality, and how products are tested for the presence of these impurities. Finally, you will learn about the structure of hydrocarbons, how product composition affects product quality, and some of the tests used to determine product composition.	5

WEEK 1

Module4 : Evolution of DCS

S no.	Topic Title	Description	Duration (Days)
1	Evolution of DCS in Process control.	Journey Traditional process control system to Model DCS Experion PKS HIVE	1

WEEK 2-3

Module1 : PLC (Control Edge) and SCADA Workshop

S no.	Topic Title	Description	Duration (Hrs)
1	PLC and SCADA Engineering	<p>Identify hardware components of ML 200R PLC and its I/O system, gain the basic skills to operate Soft Master required to implement the ML 200R PLC, utilize tools to facilitate system online support functions. You will learn the basic concepts and strategies needed to develop guidelines for effective and consistent planning of the system. Lab exercises will include troubleshooting typical errors.</p> <p>You will learn the operation of the Experion PKS. System consisting of the Experion PKS Server and SCADA controllers. Standard Experion PKS Station displays and HMIWeb graphic displays for Experion PKS are used to control and monitor both analog and digital process points and to monitor process alarms.</p>	24

Module2 : DCS Workshop

S no.	Topic Title	Description	Duration (Hrs)
1	DCS Engineering	<p>You will learn the basic concepts and strategies needed to develop guidelines for effective and consistent planning of the system. It includes extensive hands-on lab exercises where participants will build and configure a Control Execution Environment applicable to C300.</p>	40

WEEK 2-3

Module 3 : HMI Workshop

S no.	Topic Title	Description	Duration (Hrs)
1	HMI workshop	<ul style="list-style-type: none">• Conceptual understanding of graphic building guidelines to enable efficient display design• Design and construct displays to create an effective interface for Plant Operations• Participants will develop Experion PKS operating displays using the HMIWeb Display Builder. Lab exercises also include practice in building components for shape libraries	8

Module 4 : Honeywell Factory Visit

S no.	Topic Title	Description	Duration (Hrs)
1	Factory Visit	One day Honeywell Factory Visit to experience Experion PKS Hardware and assembly staging area and Honeywell Customer Integration Centre.	6

WEEK 4

S no.	Topic Title	Description	Duration (Hrs.)
Module 1	Networking	<ul style="list-style-type: none"> • Network and Ethernet Concept • Network Topologies and Protocols • Introduction to Process Control virtualization and Network • FTE Concepts Overview • Switch Configuration for FTE • Process Control Network Troubleshooting 	8
Module 2	Virtualization	<ul style="list-style-type: none"> • Basics of Virtualization • System Architecture of Virtual Environment • ESXi and vSPHERE Client • Experion Guest Operating System Configuration • Thin Client • vCenter • ESXi Host and Network • VMware Workstation 	8
Module 3	Cyber	<ul style="list-style-type: none"> • Industrial Control Systems (ICS) Cybersecurity Awareness • IT vs OT 	8
Module 4	Internet Of Things	<ul style="list-style-type: none"> • IOT. • Usage of IOT in Industrial applications • Honeywell Forge-Industrial IoT Analytics Platform 	8
Module 5	Introduction to OneWireless™ Network	<p>Recognize the role of the major hardware and Software components and learn how data flows through the OneWireless™ Network</p> <ul style="list-style-type: none"> • Plan and configure the OneWireless™ Network • Implement and provision OneWireless™ transmitters in a OneWireless™ Network 	8

FREQUENTLY ASKED QUESTIONS (FAQ'S)

Q : What is the minimum no. of registrations to confirm a Batch?

A : 12 Students

Q : What is the maximum no. of registrations in a batch?

A : 18 Students

Q : Is instructor available face to face for all 4 weeks Training?

A : Yes. All the modules will be delivered by Honeywell Faculty face to face.

Q : Can the training be delivered in virtual mode?

A : Yes. The training can be delivered as Virtual Instructor Led Training (via MS-Teams). Hands on Labs will be conducted on cloud-based environment.

Q : When can value added courses be delivered?

A : The delivery mode and schedule can be mutually decided among College / University and Honeywell.

Q : Do I need to pay entire fee in advance ?

A : Yes. Fee would need to be paid in advance (15 Days) for complete Batch via DD.

FREQUENTLY ASKED QUESTIONS (FAQ'S)

Q : Will I get a Participation Certificate for the modules attended?

A : Yes. Student will get participation certificate per each module.

Q : Do I get a second chance for assessment ?

A : Yes. Passing criteria for assessment is 80%. In case a participant does not score 80%, they would be required to retake the exam.

Q : What if I need only certain modules OR do not have 4 weeks to do the training?

A : Students and college may choose amongst the offered modules and request for a customized curriculum. However, this curriculum should be of minimum one week in duration.

Q: How to register for a module?

A : Drop a mail to hps-training-india@Honeywell.com

Q : Do I need to manage T&L on my own ?

A : Yes. In case of training in Honeywell Campus in Pune, student need to manage T&L on their own.

Q : Do I need to carry my own laptop for Honeywell in-campus Training ?

A : No. Honeywell Academy will provide the required infrastructure for the classroom trainings conducted in Pune.

TRAINING SCHEDULE

Training schedule will be mutually agreed between college/university and Honeywell Academy. Any training request or registration must be done at least 20 days in advance to training start date.

Honeywell Academy will need a duly filled in registration form per student for enrollment. Your registration will be confirmed once all information provided is verified.

Travel arrangements are NOT recommended until you receive a final enrollment confirmation by email from Honeywell Academy, Pune.

Full Name	
Education Qualification	
Year of Completion	
Institute/University Name and Address	
Institute/University Contact Details	
Proof of Date of Birth (Copy of Driving License, Passport, PAN Card or Aadhar Card)	
E-Mail Address	
Phone	

THANK YOU

You can also write to us for any query at:
hps-training-india@Honeywell.com

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