Highly Intensive, Hands-On Basic to Advanced

TECHNICAL TRAINING

ISA TECHNICIAN BOOT CAMP SERIES

• Process Automation Boot Camp For Non-Maintenance Personnel (PABC)
• Technician Training Boot Camp (TTBC)
• Tactics for Advanced Troubleshooting Boot Camp (TATC)
• Extreme Instrumentality: Electrical to Instrumentation Cross Training Boot Camp (XTBC)

ISA offers a comprehensive set of in-depth, hands-on technician training courses—led by our world-class industry experts—that allows you to select the right level and type of technical training to meet your or your employees’ specific needs.
Training Schedule
ISA Technician Bootcamp Series

**PABC**
Process Automation Boot Camp
[www.isa.org/training/PABC](http://www.isa.org/training/PABC)
14–18 August (PA) | 13–17 November (IL)

**TTBC**
Technician Training Boot Camp
[www.isa.org/Training/TTBC](http://www.isa.org/Training/TTBC)
5–9 June or 2–6 October (TX) | 7–11 August (CO)
30 October – 3 November (PA)

**TATC**
Tactics for Advanced Troubleshooting Boot Camp
[www.isa.org/training/TATC](http://www.isa.org/training/TATC)
12–16 June (NC) | 21–25 August (IL) | 11–15 December (DE)

**XTBC**
Extreme Instrumentality: Electrical to Instrumentation Cross Training Boot Camp
[www.isa.org/training/XTBC](http://www.isa.org/training/XTBC)
26–30 June or 25–29 September (NC)
ISA Technician Boot Camp Series

A wide-range of offerings—from basic to advanced—of highly intensive, hands-on technician training opportunities

Choose the level of training that’s right for you and your current skill set.

Whether you’re an individual seeking in-depth technical training to meet your specialized job needs, or a company in search of a multi-course training solution for your employees, look no further than ISA’s Technician Boot Camp Series.

Choose—based on your individual training needs—from the introductory process automation training course for non-maintenance personnel, the rigorous control systems technician training course for experienced technicians, or the ongoing maintenance course in tactics for advanced troubleshooting. All three training options within the ISA Technician Boot Camp Series deliver:

• Fast-paced, highly intensive instruction over multiple days
• An emphasis on hands-on laboratory learning that simulates real-world job functions and technical processes
• The industry-proven expertise of ISA’s premier automation and control instructors

Learn more and enroll yourself, your co-workers, and/or your employees at: www.isa.org/2017/BootCamp
Process Automation Boot Camp For Non-Maintenance Personnel

Specifically developed for non-maintenance personnel with little or no background in the field of process measurements and control, this new course focuses on the physical measurement technologies, the communication signals, and the various applications of instrument equipment to achieve common process measurements and control. The course is strategically designed around lab demonstrations and in depth class discussions, offering a fundamental knowledge for operations personnel, technicians, and engineers working in the process control industry.

Course Objectives:
• Provide an overview of industrial measurement, automation equipment, and equipment installation to non-maintenance personnel so that they gain a basic knowledge of instrumentation, including terminology and operation
• Outline recommended installation practices for the most common process measurement and control equipment
• Describe measurement technologies employed by different types of measurement instruments
• Demonstrate transmitter and control valve configuration and calibration processes
• Explain the process control loop
• Identify basic troubleshooting techniques to verify proper field equipment operation

Course Details:
Course No.: PABC • Length: 4.5 Days • CEUs (PDHs): 3.2 (32)
Registration: $2,380 ISA Member; $2,680 Affiliate Member; $2,980 Community Member/List; $2,380 Multi-Registration Rate

Schedule:

<table>
<thead>
<tr>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgemont, PA, USA</td>
<td>14–18 August 2017</td>
</tr>
<tr>
<td>Columbia, IL, USA</td>
<td>13–17 November 2017</td>
</tr>
</tbody>
</table>

Who Should Attend?
• Operations personnel with no instrument maintenance responsibilities, but who require a general knowledge of process automation equipment
• Automation engineers who need a basic understanding of process automation equipment, signal transmissions, and process measurements
• Process control engineers who need to understand the operation of all equipment associated with the process control loop
• Process control equipment sales staff needing to learn process measurement and control and the various applications of process instrumentation
• Managers responsible for overseeing operations or maintenance personnel who need a general overview of the technology maintained by their staff.
Technician Training Boot Camp

Combining minimum lecture and maximum hands-on experience, this intense course focuses on the knowledge required by a control systems technician with five years of experience in performing maintenance, calibration, and troubleshooting tasks typical of a plant floor environment. Starting with basic instrumentation fundamentals and ending with the advanced and ultimate in smart technology, this comprehensive program will test an individual’s skill sets and serve as a self-assessment of additional training needs. This course will:

• Provide a review of industrial measurement and control concepts and terminology
• Review and refresh present skills
• Introduce new skills

Course Objectives:
• Provide an overview of industrial measurement and control in order to communicate appropriately with other control system professionals
• Define a process to properly tune control loops
• Present a systematic approach for troubleshooting and start-up of single- and multi-loop control loops to maintain good process control systems
• Describe the operation and maintenance of pneumatic instruments employed in modern process facilities with an emphasis on valves, positioners, controllers, and transmitters
• Perform proper installation, calibration, and maintenance of electronic instruments
• Deliver a working knowledge of smart field devices including both digital transmitters and digital valve controllers


Course Details:
Course No.: TTBC • Length: 4.5 Days • CEUs (PDHs): 3.6 (36)
Registration: $3,390 ISA Member; $3,815 Affiliate Member; $3,990 Community Member/List; $3,390 Multi-Registration Rate

Schedule:

<table>
<thead>
<tr>
<th>Part of ISA Technical Training Camps</th>
<th>Houston, TX, USA</th>
<th>Englewood, CO USA</th>
<th>Royersford, PA, USA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5–9 June 2017</td>
<td>2–6 October 2017</td>
<td>30 October – 3 November 2017</td>
</tr>
<tr>
<td>Who Should Attend?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Technicians with instrument maintenance responsibilities and a good working knowledge of instrument fundamentals and terminology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Instrument supervisors needing to understand and evaluate the skill sets required to perform instrument maintenance tasks or are required to perform maintenance tasks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Maintenance and reliability engineers needing to learn and evaluate instrument maintenance processes and/or participate in maintenance solutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Process control engineers with instrument maintenance responsibilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Contract instrument maintenance personnel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Maintenance managers wanting a working knowledge of instrument maintenance</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Who Should Attend?
Tactics for Advanced Troubleshooting Boot Camp

This new course details the techniques required to troubleshoot today's instrument loops and equipment. From understanding loop fundamentals to employing built-in equipment diagnostics, this class will give the student an advantage in problem identification via the latest in test equipment and communicators used in the process control industry. The hands-on exercises and instructor demonstrations are designed to simulate loop and equipment malfunctions to better demonstrate established troubleshooting techniques. Various equipment built-in diagnostics will be discussed and employed to aid in equipment troubleshooting.

Course Objectives:
- Demonstrate actions and measurements used to troubleshoot pneumatic loops
- Provide specific troubleshooting techniques and measurements used for the analysis of the 4-20 mA loop
- Discuss various built-in diagnostics employed to determine proper transmitter operation or malfunction
- Describe the most common communication signals and demonstrate measurements used to ensure proper operation
- Demonstrate control valve DVC configuration and calibration processes used to validate proper operation
- Discuss and demonstrate DVC built-in diagnostics used to identify control valve malfunctions


Course Details:
Course No.: TATC • Length: 4.5 Days • CEUs (PDHs): 3.2 (32)
Registration: $3,390 ISA Member; $3,815 Affiliate Member; $3,990 Community Member/List; $3,390 Multi-Registration Rate

Schedule:
<table>
<thead>
<tr>
<th>Location</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA Headquarters, Research Triangle Park, NC, USA</td>
<td>12–16 June 2017</td>
</tr>
<tr>
<td>Columbia, IL, USA</td>
<td>21–25 August 2017</td>
</tr>
<tr>
<td>Newark, DE, USA</td>
<td>11–15 December 2017</td>
</tr>
</tbody>
</table>

Who Should Attend?
- Instrument technicians with maintenance responsibilities that require specific knowledge of instrument control loops and equipment malfunction identification
- Maintenance and reliability engineers responsible for loop and equipment integrity
- Process control engineers
- Automation engineers
- Supervisors needing general knowledge of troubleshooting techniques employed for rapid problem identification
Extreme Instrumentality: Electrical to Instrumentation Cross Training Boot Camp

This class focuses on the knowledge and skill-sets required to function as an instrument maintenance technician. The electrical skill-sets possessed by a trained electrician will serve as basis for expansion to include the skill-set required to maintain an instrument control system. Process measurement techniques, measurement and control equipment, calibrations techniques and calibration equipment will be discussed and utilized in numerous hands-on lab sessions. The knowledge and skill-sets gained from attending this class will lead the student to become an asset to an I&E maintenance team.

Course Objectives:
• Introduce students to instrument documentation for proper document interpretation
• Review physics terminology and definitions, math functions, and engineering unit assignments as used in the instrumentation field
• Introduce instrument calibration equipment and its proper utilization
• Discuss process control and measurement fundamentals and related equipment
• Discuss analog/digital transmission signals
• Relay proper use of HART communicators
• Discuss process control valve elements, makeup and function
• Provide proper calibration techniques for transmitters and control valves
• Practice loop wiring connections, calibrations, equipment configurations/operations
• Discuss instrument troubleshooting techniques
• Discuss process control fundamentals

Course Details:
Course No.: XTBC  •  Length: 4.5 Days  •  CEUs (PDHs): 3.6 (36)
Registration: $3,390 ISA Member; $3,815 Affiliate Member; $3,990 Community Member/List; $3,390 Multi-Registration Rate

Schedule:
ISA Headquarters, Research Triangle Park, NC, USA
26–30 June 2017
25–29 September 2017

Who Should Attend?
• Electricians assigned the additional responsibilities of instrument maintenance
• Technicians with electrical skills cross training into the instrument discipline
• Supervisors needing to audit/evaluate a cross training program for their employees
ISA Technician Boot Camp Series

Select the intensive technician training boot camp that’s right for you or your employees!

About ISA Training
ISA’s courses are known and respected worldwide for their unbiased, practical approach to technology application. All ISA courses are led by industry experts who offer in-depth, real-world coverage of topics critical to automation and control success. Students who enroll in ISA training courses are able to immediately apply what they’ve learned in the classroom and laboratory settings.

Learn more and enroll yourself, your co-workers, and/or your employees at:
www.isa.org/2017/BootCamp

ISA is accredited by the International Association for Continuing Education and Training (IACET). ISA complies with the ANSI/IACET Standard, which is recognized internationally as a standard of excellence in instructional practices. As a result of this accreditation, ISA is authorized to issue the IACET CEU.