Maximize your learning experience during the 2016 ISA Process Control & Safety Symposium and Exhibition

Get ready for ISA's expert training and technical content!

Add value to your 2016 Process Control & Safety Symposium and Exhibition (PCS) experience by taking advantage of three stellar ISA safety and security courses:

- Electrical Controls for the Control Systems Technician (TI23C)
- Introduction to Industrial Automation Security and the ISA/IEC 62443 Standards (IC32C)
- Introduction to Safety Instrumented Systems (EC50C)

Register today and earn 0.7 CEUs for each course.
Gain technical know-how and practical skills direct from industry experts.

ISA Training: World-class instruction with real-world application

ISA technical training is recognized globally for its unbiased, practical approach to learning. ISA courses draw on the in-depth marketplace experience of more than 100 prominent subject matter experts across virtually all technical fields in automation. Instruction is as innovative—continually reflecting emerging market dynamics and new technologies—as it is flexible—available in a variety of formats, from traditional classroom settings (both offsite and onsite) to online, instructor-assisted courses and live and pre-recorded webinars.

2016 ISA Process Control & Safety Symposium and Exhibition

ISA is extremely excited to bring back to Houston the 2016 Process Control & Safety Symposium and Exhibition, a content-rich, power-packed conference and exhibition designed to help process measurement and control professionals in chemical, petrochemical, and energy processing and other process industry sectors operate more safely and securely.

This far-reaching event—drawing on the global expertise of seven ISA technical divisions—offers an outstanding combination of world-class training, expert-led presentations and keynote addresses, paper sessions, tutorials, interactive panel discussions, vendor and solution demonstrations, and social activities.

Visit **www.isa.org/PCS/T2016** for event details and to register.

When: 7–10 November 2016

Where: Houston Marriott Westchase, 2900 Briarpark Drive, Houston, Texas, USA

Conference Registration: US $645 ISA Member, US $720 Affiliate Member, US $795 Community Member/List, US $125 Student (banquet not included), US $275 Nonworking Retiree (banquet not included)

The only thing more important to you than process control is safe process control.

EP30-6453-0716

Make the most of your experience at PCS Symposium and Exhibition 2016!

Attend one of three essential ISA safety and security training courses.

Space is limited—Register Early!
To register or learn more, visit www.isa.org/PCS/T2016 or call +1 919-549-8411. Reference promo code: PCSTI6

ISA Process Control & Safety Symposium and Exhibition 2016

AUTHORIZED IACET PROVIDER
Provider #1001262

ISA has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, ISA has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, ISA is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

ISA Process Control & Safety

Symposium and Exhibition 2016

7–10 November
Houston Marriott Westchase
Houston, Texas, USA
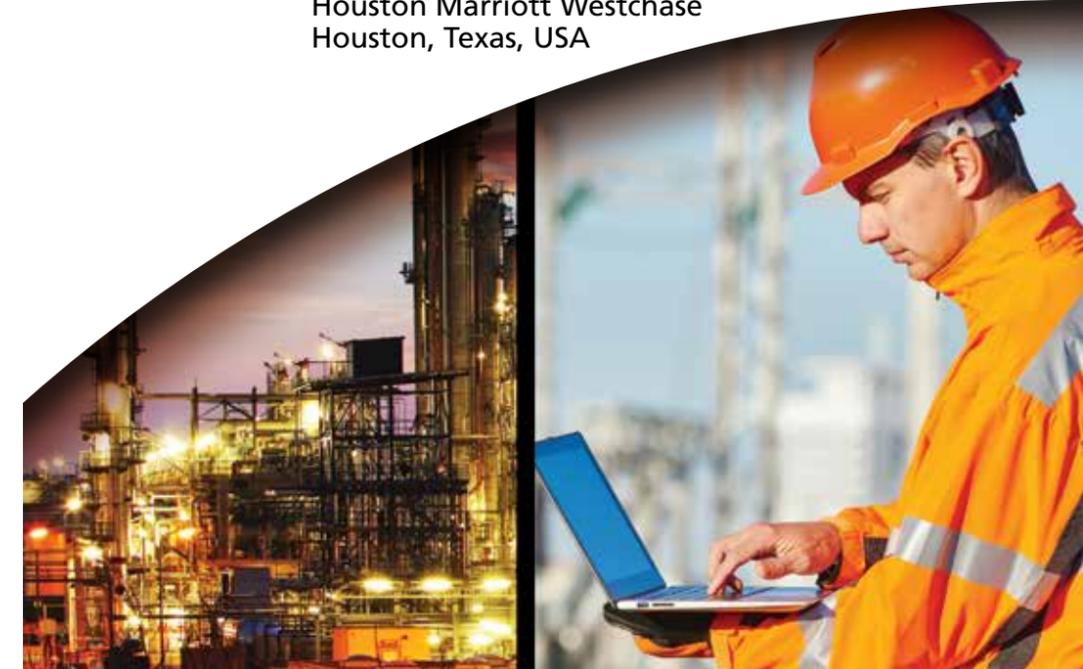
Plan to attend one of three essential courses at this event!

All Classes Held 7 November

Earn valuable CEUs when you attend one of these course offerings:

- Electrical Controls for the Control Systems Technician (TI23C)
- Introduction to Industrial Automation Security and the ISA/IEC 62443 Standards (IC32C)
- An Introduction to Safety Instrumented Systems (EC50C)

Space is limited—register early!
www.isa.org/PCS/T2016
or 919-549-8411

Reference promo code: PCSTI6

Setting the Standard for Automation™

Enhance your know-how and expertise!

Choose one of three acclaimed ISA security and safety training courses

Electrical Controls for the Control Systems Technician

Instructor: Thomas Stokes   **Course No:** TI23C

This course will focus on electrical control devices that are frequently overlooked in formal training programs. It will speed up the learning process involving electrical devices and result in a higher level of job performance. It will help improve knowledge-based skills, improve work flow efficiencies and minimize errors that result in unsafe circumstances and possible personal injury and property losses.

Register or learn more at
www.isa.org/2016/TI23C/PCS
or call +1 919-549-8411.

You will be able to:
- Use proper terminology and electrical symbols
- Make measurements of voltage, current and resistance
- Become familiar with the distribution of electrical power
- Make proper electrical connections
- Check various control devices for proper operation

- Use and describe the purpose of control relays for various applications
- Use and describe the function of timing and counting relays
- Use schematics, wiring diagrams and electrical ladder logic to commission, troubleshoot and maintain electrical controls
- Use switches, pushbuttons, selector switches, solenoids, timing relays, counters, basic motion and speed control devices
- Use electrical control devices to control the operation and failure modes for valve control applications and various process variables

"Introducing a brand new course from ISA! Don't miss it!"
ISA Training

Introduction to Industrial Automation Security and the ISA/IEC 62443 Standards

Instructor: John Cusimano   **Course No:** IC32C

This seminar teaches you the basics of the ISA/IEC 62443 standards and how these can be applied in the typical factory or plant. In this seminar, you will be introduced to the terminology, concepts, and models, as well as the element of creating a cybersecurity management system. The system will be explained along with how these should be applied to industrial automation and control systems.

Register or learn more at
www.isa.org/2016/IC32C/PCS
or call +1 919-549-8411.

You will be able to:
- Discuss why improving industrial security is necessary to protect people, property, and profits
- Define the terminology, concepts, and models for electronic security in the industrial automation and control systems environment
- Define the core concepts of risk and vulnerability analysis methodologies

- Define the elements of the ANSI/ISA-62443-2-1 (ANSI/ISA-99.02.01-2009)— Security for Industrial Automation and Control Systems: Establishing an Industrial Automation and Control Systems Security Program
- Define the concepts of defense in depth and the zone/conduit models of security
- Explain the basic principles behind the policy development and key risk mitigation techniques
- Explain why improving industrial security will be necessary to protect people, property, and profits

"It gave me a general overview of how to setup security measures."
Donald Peck, Utility SCADA Supervisor

Introduction to Safety Instrumented Systems

Instructor: Paul Gruhn   **Course No:** EC50C

There are many different ways of designing a safety instrumented system (SIS). Debate continues as to how one even makes these choices (past experience, qualitative judgment, quantitative analysis, etc.). This seminar will cover the basics of what needs to be done in the design and selection of safety systems.

Register or learn more at
www.isa.org/2016/EC50C/PCS
or call +1 919-549-8411.

You will be able to:
- Recognize the design basis of recent standards, guidelines, and recommended practices
- Describe the difference between process control and safety control
- Describe the lifecycle set of activities that are necessary to design, implement, and maintain safety systems

- Discuss the basics of evaluating process risk levels
- Discuss the basics of determining Safety Integrity Levels (SILs)
- Describe the failure modes of safety systems
- Recognize the real impact of redundancy
- Describe the pros and cons of various logic system technologies
- Explain the impact of field devices on system performance
- Identify documentation requirements

"An excellent one day overview of a complex and diverse subject."
Peter Skipp, Engineering Manager

Leverage the knowledge of our expert instructors!

John Cusimano, CFSE, CISSP is an industrial control system cybersecurity and functional safety expert with more than 20 years of experience. John has spearheaded numerous control system cybersecurity vulnerability and cyber risk assessments in the Oil & Gas, Pipeline, Chemical, Water/Wastewater, Pharmaceutical, and Power industries per NIST, ISA/IEC 62443 and NERC CIP standards. He has expertise in the security testing and certification of several control and safety systems per the ISASecure and Achilles security certification programs. A leader in the development of ICS cybersecurity standards and best practices, John is chairman of ISA 99 WG4 TG2 Zones & Conduits committee and co-chair of ISA 99 WG4 TG6 Product Development committee. His is also the lead developer and instructor for the ISA IC32 series of courses. Prior to joining aeSolutions, John was director of cybersecurity services for exida and held several process automation and safety related positions with Siemens' and Moore Products Co. His career began at Eastman Kodak Company, implementingt and managing automation projects. John has a B.S. degree in Electrical & Computer Engineering from Clarkson University and holds CFSE, CISSP and GICSP certifications.

Paul Gruhn is a Global Functional Safety Consultant with aeSolutions in Houston, Texas. Paul is an ISA Fellow, Co-Chair and 26-year member of the ISA 84 standard committee (on safety instrumented systems), the developer and instructor of ISA courses on safety systems, the author of two ISA textbooks, two chapters in other books, and over two dozen published articles, and the developer of the first commercial safety system software modeling program. Paul has a B.S. degree in Mechanical Engineering from Illinois Institute of Technology, is a licensed Professional Engineer (PE) in Texas, and both a Certified Functional Safety Expert (CFSE) and an ISA 84 Safety Instrumented Systems Expert.

Thomas L. Stokes has 25 years of industrial control systems experience in production, maintenance and supervision. He has extensive teaching experience acquired at San Jacinto College in the Instrumentation Technology Department. Tom continues to teach there as an adjunct faculty member and is a member of the Instrumentation Technology Advisory Committee. Also, Tom has taught instrumentation short courses in various instrumentation subjects for Occidental, Eisai, Valero, Shell Oil, DuPont and the Texas High School Technical Preparation Program. Tom is a senior grade member of the International Society of Automation and is also a member of the Texas Community College Teachers Association.

Course Details (each course)

Date: 7 November 2016
Time: 8:00 a.m. – 4:00 p.m.
Location: Houston Marriot Westchase
2900 Briarpark Drive
Houston, TX 77042, USA

CEUs (PDHs): 0.7 (7)
Training Course Registration*:
  US $600 ISA Member/Group
  US $755 List/Community Member
  US $680 Affiliate Member