Tools of the Trade:

Tool for Success:

CERTIFIED CONTROL SYSTEMS TECHNICIAN

Setting the Standard for Automation™

Certification: A Key Tool for Success

Since 1994, ISA's Certified Control Systems Technician® (CCST®) certification program has and continues to promote the professional development of control systems technicians by recognizing and documenting knowledge, experience, and education in automation and control, and by providing a measurable qualification for hiring and promotion decisions.

The CCST program offers three levels of certification based on a technician's experience and education. **Technicians can begin testing directly at the level for which they can meet the requirements.**
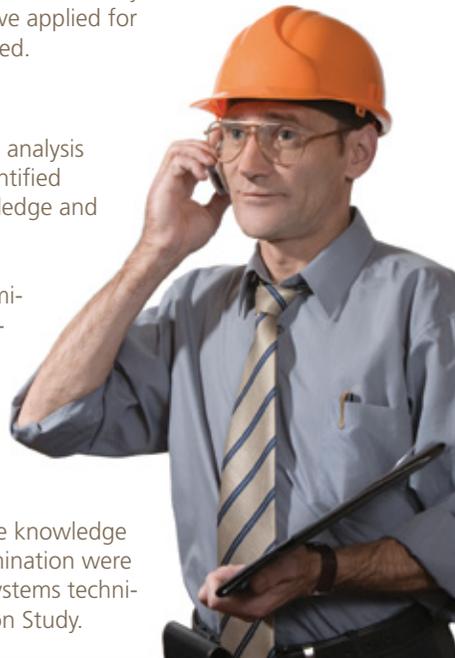
CCST certification is popular with technicians and managers looking for an objective way to measure the skill level of control systems technicians. More than 9,000 technicians have applied for certification and nearly 4,000 are now certified.

Background

The CCST exams are based on a national job analysis study of control systems technicians that identified seven performance domains as critical knowledge and skill areas for control systems technicians.

The development of a valid certification examination began with a clear and concise definition of the tasks, knowledge, and skills needed for competent job performance.

Using interviews, surveys, observation, and group discussions, ISA worked with control systems technicians and supervisors to delineate critical job components. The knowledge and skill bases for the questions on the examination were derived from the actual practice of control systems technicians as outlined in the CCST Role Delineation Study.

"The CCST exam tests your knowledge and skills in the areas critical to what we do as control systems technicians…And you can test at the level that you qualify for."

—Ward Schultz, CCST III, Emerson Process

CCST test specifications were developed by combining the overall survey evaluations of importance, frequency, and criticality, and converting the results into percentages. Importance, frequency, and criticality ratings were weighted equally in this computation. These percentages are used to determine the number of questions related to each domain and task, as shown in Table 1.

Table 1: CCST Performance Domains and Test Specifications

Domain	Percent of questions appearing on the exam		
	Level I	Level II	Level III
I. Calibration	31%	22%	19%
II. Loop Checking	21%	14%	13%
III. Troubleshooting	32%	22%	21%
IV. Start-up	16%	12%	11%
V. Maintenance/Repair	n/a	20%	20%
VI. Project Organization	n/a	10%	8%
VII. Administration	n/a	n/a	8%

The percentage of questions per domain is based on each domain's relative importance and criticality in terms of what control systems technicians are expected to know while performing their jobs. Table 1 indicates the percentage of questions appearing on the exams by level and by domain.

"Every industry is different. We all have jobs we do every week, and some we never do. The CCST certification evens that out. It gives a tech working in any industry the ability to prove skills and knowledge applicable in all industries. The three-level structure recognizes growth and development in a tech. As one moves up through Level II and III, confidence and professionalism grow."

—Andy Crowley, CCST III, DELCORA

Managers: Maintain Your Competitive Edge

As an automation and control manager, you understand workplace challenges: intensifying competition, the need to increase efficiency, and pressure to recruit and maintain experienced employees. To maintain your competitive edge, your company needs highly skilled and certified employees—**ISA CCSTs**.

Maintain a safe workplace. Safety is everone's concern. But, technicians have direct control over operations that affect product quality and system safety. CCSTs are more likely to get it done right the first time.

Document your technicians' skills. Third-party certified technicians demonstrate your company's commitment to meeting federal guidelines and fulfilling ISO9000 requirements.

Increase you company's credibility. CCSTs expand your company's bidding and service values, which ultimately increases your company's bottom line. Third-party endorsement and documented certification help your company stand out in the marketplace.

Establish documentable hiring and promotion criteria. Strengthen your workforce and company image by requiring documentation of experience, knowledge, and skills of new hires, current employees, and technicians provided to work on your outsourced projects.

"An ISA CCST has the knowledge and experience to handle the job. They have demonstrated their understanding of the fundamentals of control systems over a wide variety of areas in a challenging examination. As a manager, this gives me assurance that I've made the right choice."

—Frank Beaty, CCST III, G and F Services, PLLC

Technicians: Demonstrate Your Commitment to Your Profession

Demonstrate your commitment to the automation profession, to your company, and to your career in automation by becoming a **Certified Control Systems Technician**.

Establish your professional credentials and enhance the profession's image. The CCST program seeks to grow, promote, and develop technicians who can stand out as examples of excellence in the field. It does this by serving as an impartial, third-party endorsement of your knowledge, skills, and experience.

Improve your career opportunities and increase your chances for greater earnings. CCST certification can give you an extra edge when being considered for promotions and other career opportunities as more employers move toward requiring CCST certification.

Enhance your knowledge and skills and prepare for additional job responsibilities. CCSTs have displayed excellence in automation and control by fulfilling requirements set by ISA, demonstrating an ability to take on more responsibility.

Exhibit your personal achievements, gain peer recognition, and build self-esteem. Achieving CCST status demonstrates your competence by confirming proficiency, career involvement, and knowledge, providing you with a deep sense of personal satisfaction and kudos from your colleagues for your dedication to professional development.

Gain access to fellow CCSTs and their collective knowledge and experience via the CCST Community listserve. The CCST Community will provide you with easy access to a group of peers willing to provide input and feedback for your questions about technical issues related to your professional responsibilities. You will also be able to share your experiences and knowledge with other CCSTs seeking advice.

"I became an ISA Certified Control Systems Technician to demonstrate my knowledge, skills, and commitment to my career. I highly recommend becoming a CCST to other technicians looking to enhance their careers."

—George Lister, CCST III, Texas Tech

How to Become a CCST

❶ Review the CCST Body of Knowledge and read the CCST Program Handbook, available at **www.isa.org/CCST/Tools** or by calling **+1 919-549-8411**.

❷ Evaluate your years of experience and education to determine the CCST level for which you are qualified to apply.

> **Level I** requires a minimum of five years experience or education and experience in instrumentation; measurement; control; or related fields, including electronics, electrical, and mechanical.
>
> • Successfully completing the **CST Associate** exam equals one year of experience that counts toward the CCST Level I requirements. To learn more about the CST Associate program, visit **www.isa.org/CST/associate**.
>
> **Level II** requires a minimum of seven years experience or education and experience, with at least two years specifically in instrumentation, measurement, control, or related fields.
>
> **Level III** requires a minimum of thirteen years experience or education and experience, with at least five years specifically in instrumentation, measurement, control, or related fields.

❸ Complete and submit the CCST application, available online at **www.isa.org/CCST/Tools**, and any necessary paperwork to ISA.

❹ Prepare for the exam using ISA's or other study materials. Information on preparation materials can be found at **www.isa.org/CCST/Tools**.

❺ Take and pass the exam.

Get Certified

With electronic testing, getting certified is faster and easier than ever before! You can take the CCST exam at one of our electronic testing locations—located around the world—when and where it's most convenient for you. And, you'll get your pass/fail status immediately!

"My company is a big supporter of CCST, and since I did not yet qualify for CCST Level I, I applied for the ISA CST Associate program. This program is an excellent stepping stone on the path to becoming a Certified Control Systems Technician because passing the CST Associate exam counts as one year of experience towards the CCST Level I requirements. For anyone planning to become a CCST that does not yet qualify for Level I, this is an opportunity you can't pass up."

—Aaron Brodhacker, Burns and Roe Services Corp.

Companies that support the ISA CCST Program

- Air Products & Chemicals Inc.
- Alyeska Pipeline Service Co.
- Ashland Chemical
- BASF Corp.
- Bay-Tec Engineering
- BP Oil
- Bechtel Construction Company
- Boehringer-Ingleheim—Roxanne Lab
- Cargill
- Chevron
- Chiron Corporation
- Coates Electrical & Instrumentation
- Colorado Springs Utilities
- Columbia Gas Transmission
- Coors Brewing
- CrossPoint Engineering Corp.
- Cytec Industries
- Dist. of Columbia Water & Sewer Authority
- Dupont
- Eli Lilly
- Emerson Process Management
- FMC Corp.
- General Electric
- G and F Services, PLLC.
- Honeywell
- Jacobs Engineering
- Kellogg, Brown, and Root
- Las Vegas Valley Water District
- Maverick Technologies
- Meade Electric
- Merck
- Michigan Consolidated Gas Co.
- Noramco
- Oklahoma Gas & Electric
- Pfizer
- Prime Controls
- Process Control Services, Inc.
- Raytheon
- Rohm & Haas
- Siemens-Westinghouse
- Solutia
- Southern Company
- Tesoro Hawaii
- Total Petrochemical
- Tropicana Products Inc.
- Valero Port Arthur
- Xcel Energy

Visit **www.isa.org/CCST/Tools** to apply for CCST certification today!

"ISA's CCST program distinguishes those skilled technicians that are highly motivated and engage in self-improvement, either for simple self-satisfaction or for greater career and professional advancement. CCST also provides them a source of credibility with fellow colleagues and management alike. Our plant requires a minimum of a CCST Level I for the technicians and recognizes and values the Level II and III CCSTs when it comes to career advancement."

—David Taylor, CCST III, Rohm & Haas

International Society of Automation
67 Alexander Drive
P.O. Box 12277
Research Triangle Park, NC 27709

35-6512-0616

Application deadline approaching fast!

www.isa.org/CCST/Tools.

Visit www.isa.org/CCST/Tools to learn more.

Founded in 1945, the International Society of Automation (www.isa.org) is a leading, global, nonprofit organization that is setting the standard for automation by helping over 30,000 worldwide Members and other professionals solve difficult technical problems, while enhancing their leadership and personal career capabilities. Based in Research Triangle Park, North Carolina, ISA develops standards, certifies industry professionals, provides education and training, publishes books and technical articles, and hosts conferences and exhibitions for automation professionals. ISA is the founding sponsor of the Automation Federation (www.automationfederation.org)

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