



Certified Technology Specialist – Design (CTS-D) Certification Testing Procedures

CTS-D is targeted to design consultants, dealer system designers, system engineers, system sales professionals and managers of design and installation departments. Testing addresses facilities and systems design, as well as processes, codes and regulations.

Students taking the CTS-D certification test, please review the following:

CTS-D Certification Testing Procedures

All tests for specialized certifications are normally offered at the InfoComm Academy® located in Fairfax, Va., but may be offered at other locations. The test consists of three separate elements: a *written test*, an *oral test* and a *practical test* (see details below). The testing process begins in the evening, when the written test is handed out; the following day is used for the oral and practical tests. Candidates will be notified as to when they must turn in the written test and begin the oral and practical test. Testing shall conclude by 6 p.m. of the second day. **A passing score of 80 percent is required on each test.**

Eligibility and prerequisites

Applicants must have a valid CTS plus two years' industry experience in order to apply for and take the CTS-D test.

Application Process

- All candidates for a CTS-D certification must submit an application and be approved prior to registering for the testing.
- The application form is available as a [downloadable PDF file](#).
- Candidates who require special arrangements for testing because of a disabling condition must complete that section of the application. Such conditions include, but are not limited to, medical, physical or learning disabilities.
- Grades are only provided to the candidate, unless they provide permission to release their grade to another person. The application has a section where candidates can specify third parties who may be informed of their grade.
- *Mail or fax* the completed application to:
ICIA
Attn: Director of Certification & Workforce Development
11242 Waples Mill Rd., Ste. 200
Fairfax, VA 22030
Fax: 703.278.8082

Materials to bring

- ICIA course materials and handouts
- Computers can be used for math and online research, however it is anticipated that only a minimum of online time will be needed. Computers *cannot* be used to create CAD or CAD-like drawings. All drawings submitted must be created without the aid of a computer.
- All work on the practical test must be done in the Academy. Candidates will not be allowed to return to hotels or home (if local) mid-test in order to get materials.
- All testing materials issued to candidates must be returned.

The 3 Sections of the Test – Written, Oral, Practical

1. Written Test

Testing begins the evening of the last day of the *Design School 3: Systems Design* onsite course, when the written test being handed out. The written test consists of multiple choice questions and covers general knowledge on design practices and procedures.

This is an open-book written test and the candidate will be instructed to complete the written test back in their hotel room (or home) and turn it in the next morning.

Sources for the test content are the *Design School Online*, and *Design School Level 1, 2 and 3* courses.

2. Oral Test

When candidates turn in the written test in the morning, they will be assigned time slots for their oral test. Time slots will run throughout the testing day.

Candidates will answer questions from a panel of examiners. Candidates will be scored on correct/incorrect answers and will also be scored on their use of terminology and technology. Each examiner will score the candidate, and the final score will be an average of the examiners' individual scores.

Questions will be based on current technology and familiarity with design concepts for audio, video, videoconferencing, control systems, etc. Some questions place the candidate in the role of a consultant consulting with a client.

3. Practical Test

The practical test consists of the audiovisual systems design for a specific room (dimensions are specified). Candidates are provided a reference book of equipment. Candidates are expected to provide the following on the material given:

- Audiovisual Facilities Plan, including components located on or in floors, walls and ceilings
- Elevations for screens, cameras and other audiovisual equipment with dimensions
- Base-Building Electrical Conduit, IT Requirements and Power Plan Diagram
- PAG/NAG, amplifier power and loudspeaker spacing calculations
- Loudspeaker coverage with calculations section

- Reflected Ceiling Plan w/loudspeakers, ceiling electrical boxes and power requirements
- Good viewing area(s) for each screen surface with calculations, sightline study match line
- Section View for sightlines study
- Projector Lumens, Throw Distance and System Bandwidth calculations
- DSP Matrix Routing Representation
- Reflected Ceiling Plan with lighting recommendations and zones
- Audio, Video, Control Equipment list (not including miscellaneous materials/labor)
- Power consumption and heat generation / BTU calculations (major components)
- Cable Pull Sheet

Other deliverables **to be created on individual 11”x17” sheets.:**

Note that all diagrams must indicate device type label, connector type, wire type and input/output designations.

- Detailed Audio Flow Diagram, including IT requirements, wall, floor or ceiling box connections
- Detailed Video Flow Diagram, including IT requirements, wall, floor or ceiling box connections
- Detailed Control Flow Diagram including IT and environmental requirements, and including wall, floor or ceiling box connections
- Conduit Riser Diagram with conduit sizing calculations and diameters, power, ground requirements
- Wall plate and Floor box details, including layout of plates in floorbox(es)
- Equipment Rack(s) Elevation Detail(s)

Scoring will be determined on completeness of all stated requirements candidates are asked to provide.

Test Results

- Successful completion of the CTS-D testing requires a passing score of 80 percent on each of the three tests (written, oral and practical).
- Results should be available within several weeks.
- Candidates who are unsuccessful shall not have access to review their performance. These candidates will be given diagnostic information as well as directions on how to reapply for a future test.

If you have any questions regarding the certification process, please contact Lou Nanni, ICIA Director of Certification & Workforce Development, at 800.659.7469 x321 or lnanni@infocomm.org.