BICSI PROFESSIONAL DEVELOPMENT CATALOG

2020-2021

The Global Leader in ICT Education, Certification & Standards.

BICSI

PROFESSIONAL DEVELOPMENT— CRITICAL TO A THRIVING CAREER IN ICT

Professional development is an essential component to any successful career, but it becomes even more critical in an industry as technical and progressive as information and communications technology (ICT). BICSI® provides the resources to help you stay informed on trends and industry best practices, and is your source
for earning prestigious certifications recognized worldwide. Let us share this knowledge with you, and guide you along an educational path that will build your career and professional value.
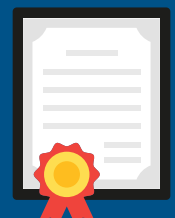
COURSES + **MANUALS & STANDARDS** + **EXAM** = **CERTIFICATION**

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BICSI VISION STATEMENT

BICSI is the worldwide preeminent source of information, education and knowledge assessment for the constantly evolving information and communications technology (ICT) community.

BICSI MISSION STATEMENT

BICSI's Mission is to:

+ Lead the information and communications technology community with excellence in publications, education and knowledge assessment.

+ Advance our members' ability to deliver the highest quality products and services.

+ Provide our members with opportunities for continual improvement and enhanced professional stature.

ANNOUNCING TWO NEWLY REVISED PROGRAMS

BICSI DATA CENTER DESIGN CONSULTANT (DCDC) PROGRAM
Expanded topical areas, new DC standards, manual and updated courses.

BICSI ICT DESIGN FUNDAMENTALS PROGRAM
Updated fundamental modules with a cinematic approach and increased interactivity.

BICSI ICT CAREER PATHS

There are many specialized fields within the information and communications (ICT) and telecommunications industry, each one requiring a unique knowledge base and skillset. BICSI offers training and professional certifications in many of these areas, including:

- **Cabling Installation**

- **Communications Distribution Design**

- **Data Center Design**

- **Outside Plant Design**

- **Telecommunications/ICT Project Management**

Customize Your Own Professional Journey

The illustration to the right offers suggested pathways to help you navigate your ICT career goals and transition from one specialty area to another. You choose the unique route that will most benefit your career.

"BICSI training reinforces the importance of standardization and high-quality performance by anyone involved in the design or installation of data communications systems."

Stan Davidson, RCDD, LEED AP®, Data Communications Designer, Woolpert, Charlotte, North Carolina, USA

One of Many Career Paths Through BICSI's Credentialing Programs

ICT CABLING INSTALLATION

Bicsi INST1

Bicsi INSTC

Bicsi INSTF

Bicsi TECH

Bicsi RTPM
PROJECT MANAGEMENT

Bicsi DCDC
DATA CENTER DESIGN

Bicsi RCDD
DISTRIBUTION DESIGN

Bicsi OSP
OUTSIDE PLANT
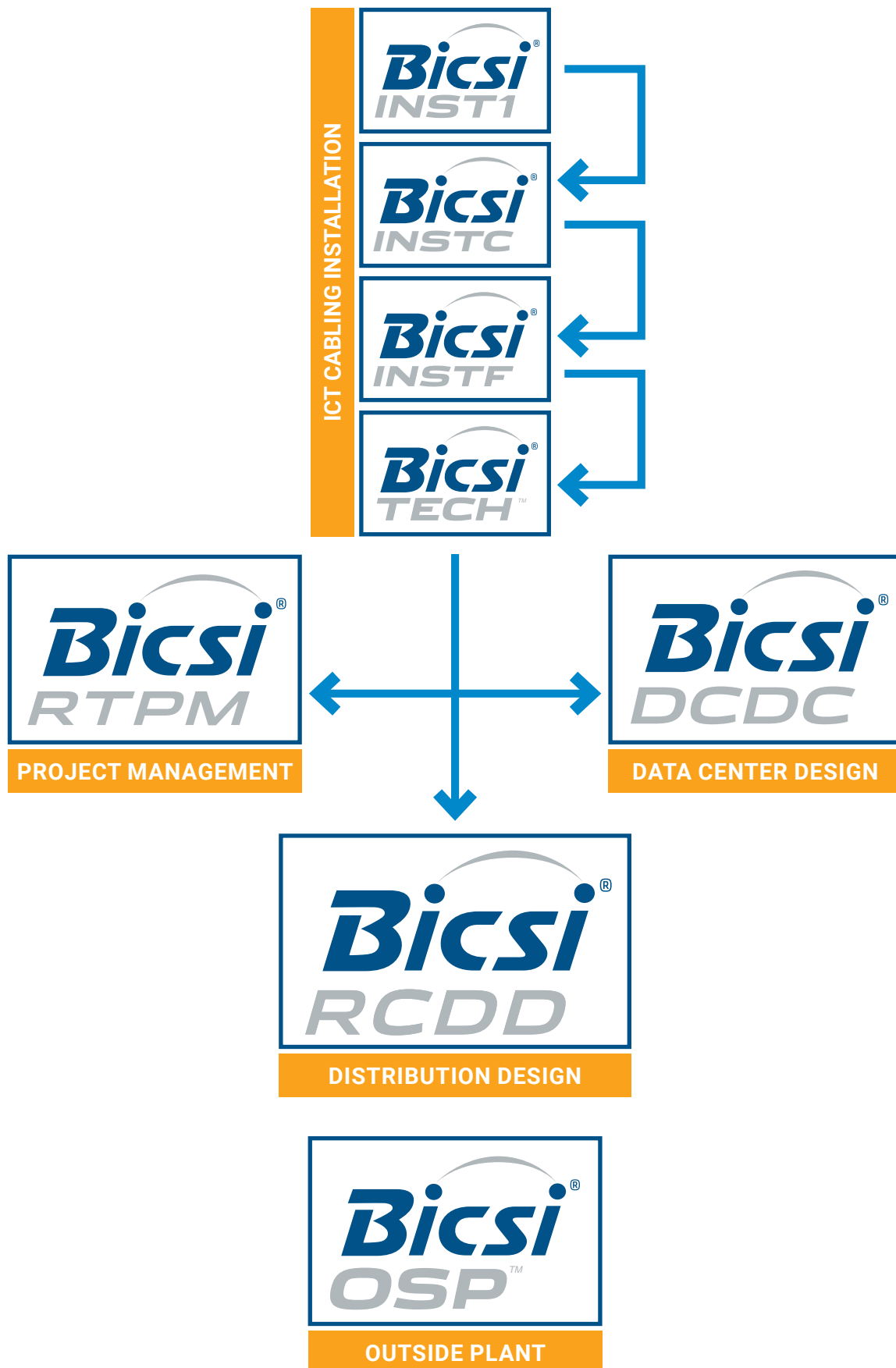
ICT CABLING INSTALLATION PROGRAM

BICSI's ICT Cabling Installation Program offers core skills training at varied levels of increased knowledge and experience. Certification examinations are available for each level.§ Skills taught include conducting site surveys, pulling wire/cable and terminating and testing copper & optical fiber to the highest level of specification.

ICT Cabling Installation

INSTALLER 1® PROGRAM

Provides the fundamentals of cabling installation, including introductory knowledge and basic skills. An exam is offered to those who wish to earn the Installer 1 certificate.*

Experience Requirement (Installation):**

+ None

Who Will Benefit:

+ Those looking for a career in cabling installation
+ Individuals with little or no cabling experience who want to know more about cabling installation
+ Candidates preparing for the Installer 1 exam*

Suggested Training & Study Materials:

+ IN101: Installer 1 Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ Installer 1 Exam Study Aid Package***

bicsi.org/installer1

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ICT Cabling Installation

INSTALLER 2, COPPER® PROGRAM

Provides an overview of transmission principles related to copper, professionalism, safety and industry best practices. Installer 2, Copper credential holders have shown they can effectively perform all installation tasks specific to copper.*

Experience Requirement (Installation):**

+ One year of experience

Who Will Benefit:

+ Installers seeking to learn new copper installation skills
+ Level 1 Installers seeking the Installer 2, Copper credential
+ Candidates preparing for the Installer 2, Copper exam*

Suggested Training & Study Materials:

+ IN101: Installer 1 Training
+ IN225: Installer 2, Copper Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ Installer 2, Copper Exam Study Aid Package***

bicsi.org/in2copper

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§Individuals who pass the Installer 1 exam will earn a nonrenewable certificate. *Course registration is separate from the exam application and the exam fee is not included in the course fee. Before taking the exam, you must be approved by BICSI. You may complete an online exam application. **For complete exam experience requirements, visit bicsi.org/installation and click on your desired installer/technician level. ***Installation Exam Study Aids include flash cards, quiz questions and other materials, and are included with the relevant installation or technician course.

ICT Cabling Installation

INSTALLER 2, OPTICAL FIBER® PROGRAM

Provides an overview of transmission principles related to optical fiber, professionalism, safety and industry best practices. Installer 2, Optical Fiber credential holders have shown they can effectively perform all installation tasks specific to optical fiber.*

Experience Requirement (Installation):**

+ Two years of experience

Who Will Benefit:

+ Installers seeking to learn new optical fiber installation skills
+ Level 1 Installers or Level 2, Copper Installers seeking the Installer 2, Optical Fiber credential
+ Candidates preparing for the Installer 2, Optical Fiber exam*

Suggested Training & Study Materials:

+ IN101: Installer 1 Training
+ IN250: Installer 2, Optical Fiber Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ Installer 2, Fiber Exam Study Aid Package***

bicsi.org/in2fiber

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ICT Cabling Installation

BICSI TECHNICIAN® PROGRAM

Prepares individuals to become team leaders in the field. Technician credential holders demonstrate effective project management skills, including adapting and adjusting to overcome issues that arise during installation. BICSI Technicians are well prepared to move into design or ICT project management.*

Experience Requirement (Installation):**

+ Three years of experience

Who Will Benefit:

+ Highly experienced cabling installers who oversee the planning and management of installation projects
+ Installers seeking to expand their knowledge and learn advanced copper and optical fiber installation skills
+ Candidates preparing for the Technician exam*

Suggested Training & Study Materials:

+ IN101: Installer 1, Training
+ IN225: Installer 2, Copper Training
+ IN250: Installer 2, Optical Fiber Training
+ TE350: Technician Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ Technician Exam Study Aid Package***

bicsi.org/technician

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ICT COMMUNICATIONS DESIGN PROGRAM

The BICSI ICT Communications Design Program is comprised of courses, specialty reference manuals and certifications to help individuals advance professionally in the areas of distribution design, data center design and outside plant design. A specialized ICT/telecommunications project management program is also offered, providing a valuable skillset for ICT cabling installers and designers.

Communications Distribution Design

RCDD® PROGRAM

The Registered Communications Distribution Designer® (RCDD) is the most prestigious of all BICSI credentials. RCDDs have demonstrated their ability to design, integrate and implement ICT and related infrastructure components and apply their knowledge to any industry or application.*

Experience Requirement (ICT Design):*

+ Five years of experience **OR**
+ Two years of experience plus three years' additional ICT equivalents

Who Will Benefit:

+ Planners, designers and operators
+ ICT designers and integrators
+ IT campus and facility managers
+ Technical and executive management
+ ICT field and sales engineers

Suggested Training & Study Materials:

+ DD101: Foundations of Telecommunications Distribution Design (online)
+ DD102: Designing Telecommunications Distribution Systems
+ RCDD Test Preparation Course (online)
+ *TDMM* Flash Cards (online)
+ *Telecommunications Distribution Methods Manual (TDMM)*

bicsi.org/rcdd
Pages 29-35

NEWLY REVISED
Data Center Design Consultant Program

DCDC™ PROGRAM

The BICSI Data Center Design Consultant™ (DCDC) credential is awarded to those individuals who demonstrate knowledge across all facets of data center design, including mechanical, electrical and ICT systems.*

Experience Requirement (Data Center Design):*

+ Current RCDD® credential **OR**
+ Two years of experience and TECH, RTPM or OSP certification or an ICT-related degree **OR**
+ Three years of experience

Who Will Benefit:

+ Data center planners and designers
+ Construction managers
+ Operations managers
+ Systems and equipment integrators

Suggested Training & Study Materials:

+ **COMING DECEMBER 2019!** DC101: Introduction to Data Center Design (online)
+ **NEW!** DC102: Applied Data Center Design and Best Practices
+ **COMING DECEMBER 2019!** DCDC Test Preparation Course (online)
+ **NEW!** Securing Your Data Center According to ANSI/BICSI 002-2019 (vILT***)
+ **NEW!** DC Commissioning (vILT)
+ **NEW!** DC Operations and Maintenance (vILT)
+ **NEW!** ANSI/BICSI 002-2019, *Data Center Design and Implementation Best Practices*
+ **NEW!** *Essentials of Data Center Projects*

bicsi.org/dcdc
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*Course registration is separate from the exam application and the exam fee is not included in the course fee. Before taking the exam, you must be approved by BICSI. You may complete an online exam application. **For complete exam experience requirements, visit bicsi.org/installation and click on your desired installer/technician level. ***vILT = Virtual Instructor-Led Training.

"I honestly don't know where I would be today had I never discovered BICSI or taken advantage of all the training classes and certifications, especially the RCDD. Thanks to BICSI, my family and I can relax and enjoy my retirement and financial security."

Terry Colegrove, RCDD, NTS, OSP, WD, Retired,
Communication Infrastructure Designs, Inc., St. Charles, Illinois, USA

Outside Plant Design

OSP™ DESIGNER PROGRAM

Outside Plant™ (OSP) Designer credential holders demonstrate knowledge in OSP technology and the ability to design aerial, underground and direct-buried infrastructures that connect buildings to ICT systems.*

**Experience Requirement
(OSP Design and/or Installation):**

+ Current RCDD® credential **OR**
+ Two years of experience plus 32 hours of OSP education

Who Will Benefit:

+ ICT designers and integrators
+ Data center planners, designers and operators
+ IT campus and facility managers
+ OSP field and sales engineers

Suggested Training & Study Materials:

+ OSP101: Introduction to Outside Plant Design (online)
+ OSP102: Applied Outside Plant Design
+ *Outside Plant Design Reference Manual (OSPDRM)*
+ A Deep Dive Into the *OSPDRM*, 6th Ed. (online)

bicsi.org/osp
Pages 44-49

Telecommunications Project

RTPM™ PROGRAM

The Registered Telecommunications Project Manager™ (RTPM) credential—often sought by design and installation professionals alike—demonstrates knowledge in project management concepts and tools in the ICT industry, critical to the outcome of any successful project.*

Experience Requirement (Project Management):

+ Two years of experience

Who Will Benefit:

+ Project managers and coordinators involved with ICT systems
+ Installation lead technicians and crew supervisors
+ ICT systems integrators and commissioning agents
+ Site and facility construction personnel

Suggested Training & Study Materials:

+ PM101: Introduction to Project Management (online)
+ PM102: Applied Telecommunications Project Management
+ PM103: Advanced Tools for ICT Project Management (online)
+ *Telecommunications Project Management Manual (TPMM)*

bicsi.org/rtpm
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The completely updated & remodeled Learning Academy at BICSI World Headquarters features substantial classroom modernization and state-of-the-art ICT upgrades.

BICSI LEARNING ACADEMY

BICSI Learning Academy
Our First-Rate Training. Your Preferred Learning Style.

Expect a learning experience aligned with the industry's latest technologies and advancements with BICSI Learning Academy, the ICT industry's premier source for professional development. It is our mission to ensure BICSI courses are available and convenient for everyone, no matter where they are located or how they prefer to learn. The Academy provides first-rate, globally recognized training for voice, data and video distribution, design and installation, as well as project management. By offering a variety of training options, the Academy makes it possible to gain relevant knowledge and skills to increase one's value in the workplace and earn continuing education credits (CECs)—from all over the world.
bicsi.org/academy

Face-to-Face
Training for students who prefer a classroom experience.

BICSI offers **Open Enrollment Courses** at our newly remodeled World Headquarters in Tampa, Florida. The BICSI Learning Academy has four new classrooms, all state-of-the-art with substantial ICT upgrades. In addition, three classrooms include hands-on training labs.

BICSI also schedules classes outside of BICSI World Headquarters, in areas close to or easily accessible to learners, such as major metropolitan areas and BICSI conference locations. We choose facilities that can accommodate our mobile and

technical equipment to provide an educational experience comparable to that at our BICSI World Headquarters.

BICSI open enrollment courses take place throughout the year and are open to the general public. Courses offered include design, installation and project management.

bicsi.org/academy

Live Online
Can't leave the office? No problem.

BICSI hosts **Virtual Instructor-Led Training (vILT)** that allows for live interaction between experienced industry instructors and learners. Through our ICT Workshop Series, we cover industry hot topics such as data center security and construction, power over Ethernet (PoE), intelligent buildings, distributed antenna systems (DAS) and more! Each workshop is six hours, held over a three-week period. Collaborative and application-based teaching tools include online whiteboards and video conferencing, breakout sessions, interactive polls, on-screen presentations and real-time discussions with instructors and students. **bicsi.org/vilt**

BICSI Webinars are an easy way to gain critical information
on topics and issues affecting the ICT industry today. Prepared and delivered by industry experts in real time, and typically lasting only 60 minutes, you can obtain key, relevant information to put to immediate use. BICSI webinars are available to the general public and are an inexpensive
training solution.
bicsi.org/webinars
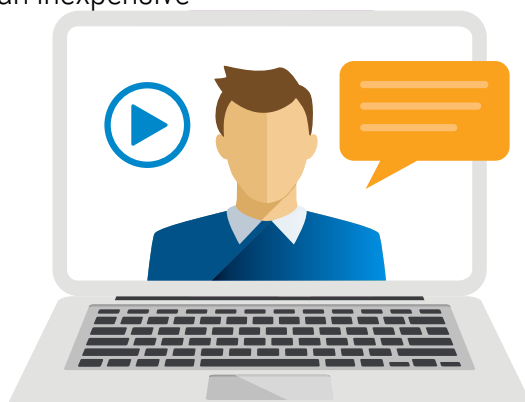
Industry-Recognized Validation

As a professional association focused on our members and others in the industry, BICSI continuously seeks to improve our offerings through third-party validation of our programs. We are proud to be recognized by the following organizations:

American Institute of Architects

BICSI has been recognized by AIA as a Continuing Education Systems (CES) Approved provider. BICSI design and project management courses satisfy AIA credential holders' general learning unit hour requirements, as well as the coveted Health, Safety and Welfare (HSW) learning unit hour requirements.

The CPD Certification Service

BICSI is accredited by CPD. Our instructor-led, online and virtual instructor-led courses, as well as some BICSI events, are eligible for CPD hours. Required by many professionals internationally, CPD hours demonstrate that an individual is current with the latest in industry and professional trends, technologies, best practices, etc.

For details, visit **bicsi.org/education** and click on Industry-Recognized Validation.

Self-Paced

Learn at your own pace, where and when it's convenient for you.

BICSI CONNECT is our 24-hour online learning portal that allows you to take a BICSI course anytime of the day, wherever you can access the internet. Featuring a continuously expanding list of offerings, BICSI CONNECT delivers a variety of technical ICT and professional development courses to further your current knowledge or provide additional skills. It's also a convenient way to earn CECs. Enhanced functionality allows you to access course evaluations, personalized training recommendations and more. Plus users can navigate the BICSI CONNECT system in English or Spanish.

Examples of topics we offer:

+ **NEW!** BICSI ICT Design Fundamentals
+ **NEW!** BICSI ICT Installation Program study aids
+ Bonding and grounding
+ Cabling media
+ Codes and standards

+ Confined spaces
+ Data center
+ Firestopping
+ ICT Design
+ Internet of Things (IoT)
+ **NEW!** Media selection

+ **NEW!** Network design
+ Networking fundamentals
+ Project management
+ **NEW!** Structured cabling
+ Safety/Injury prevention

Check **bicsi.org/connect** for the most recent course offerings.

Note: All BICSI CONNECT courses require an internet-capable device and internet connection. In addition, all BICSI CONNECT courses are nonrefundable and nontransferable.

Minimum System Requirements: Windows 7 or 8; Mac OSx10.6+; Android 4.1 or later; Apple 1OS 6.x, 7.x; IE10 or later; Firefox 21 or later; Chrome 29 or later; Safari 5.1.8 or later; sound card with speakers/headphones for audio (audio not available for all courses); pop-up blockers disabled.

Authorized Training Providers

BICSI-approved training beyond BICSI World Headquarters.

An **Authorized Design Training Provider (ADTP)** is an organization licensed to offer BICSI Design training. With locations throughout the world, ADTPs use the same quality curriculum and classroom materials offered in a BICSI-conducted class, with the added ability to include knowledge and insight specific
to their location and the markets they serve. All ADTP instructors have been BICSI-certified. **bicsi.org/adtp**

An **Authorized Training Facility (ATF)** is a site that is licensed to offer BICSI's ICT Cabling Installation Program, which includes teaching BICSI installation courses and administering the hands-on installation exams to become a BICSI Installer or Technician. BICSI ATFs provide all training using BICSI course materials and training delivery techniques to duplicate the quality training you'd expect at a BICSI-conducted class, while extending access to a variety of convenient training locations. In addition, all ATF instructors

Corporate On-site Training
Forget the travel and hotel accommodations. We'll come to you.

Bring the BICSI Learning Academy experience directly to your organization with BICSI's **Corporate On-site Training!** Companies interested in training eight or more people can experience the same professional instructor-led training available
in a BICSI Headquarters classroom without leaving the office. Holding an on-site course offers you the flexibility to choose the course(s) you want at the time you need, with minimal disruption to staff

and daily operations.
BICSI provides one of our ICT Training Delivery Specialists and all necessary class materials, ensuring you receive a first-rate learning experience. If you're looking to get your staff BICSI-certified, we can help by administering any of the hands-on BICSI Installer or Technician exams on site.
bicsi.org/onsite

ICT Cabling Installation Program

Increasing Levels of Cabling Installation Knowledge

bicsi.org/installation

BICSI's ICT Cabling Installation Program produces highly competent cabling installers by providing a career path. Four progressive courses and exams allow students to begin with basic fundamentals and build upon that knowledge. Upon completion of training, program participants should be able to conduct site surveys and install, terminate, and test copper and optical fiber cable to the highest level of specification.

GLOBALLY RECOGNIZED BICSI INSTALLATION DESIGNATIONS

+ **BICSI Installer 1**®
  No industry experience required.

+ **BICSI Installer 2, Copper**®
  At least one year of verifiable ICT industry installation experience within the last five years.

+ **BICSI Installer 2, Optical Fiber**®
  At least two years of verifiable ICT industry installation experience within the last five years.

+ **BICSI Technician**®
  At least three years of verifiable ICT industry installation experience within the last five years.

For complete exam experience requirements, visit bicsi.org/installation and click on your desired installer/technician level.

Areas of Knowledge

+ Professionalism
+ Codes, standards and regulations
+ Principles of transmission
+ Cabling media and connectors
+ Structured cabling systems (SCS)
+ Telecommunications spaces and pathways
+ General safety practices
+ Space preparation and cabling support systems
+ Pulling cable
+ Cable terminations and splicing
+ Testing and troubleshooting
+ Firestopping practices
+ Bonding and grounding (earthing) and electrical protection
+ Specialty systems installation
+ Project management
+ Retrofits and upgrades

All BICSI cabling installation credentials are achieved by passing a comprehensive exam based on the exam blueprint associated with each credential. BICSI's *Information Technology Systems Installation Methods Manual (ITSIMM)* is the reference publication from which the exams are developed. Key codes and standards from the National Fire Protection Association® (NFPA) and Telecommunications Industry Association (TIA) are also referenced.
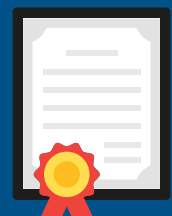
INSTALLATION COURSES + *ITSIMM* + **INSTALLATION EXAMS** = **INSTALLATION CERTIFICATIONS**

IN101: BICSI Installer 1 Training

This course provides entry-level installers with the background, knowledge and basic skills needed to function safely and effectively as part of a cabling installation team. The BICSI Installer 1 Training course is the introductory course of the ICT Cabling Installation Program series.

Course Highlights

+ Professionalism at the work site
+ Transmission fundamentals
+ Safety practices and procedures

This course offers multiple opportunities for hands-on practice.

Learn to:

+ Pull cable
+ Perform multiple IDC terminations (66, 110, LSA and BIX)
+ Terminate coaxial cable
+ Perform basic testing of copper cabling installations

Knowledge & Skill Requirements

Participants must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Stand for extended periods of time (e.g., 30 minutes)
+ Climb ladders
+ Lift and carry items weighing ≈22.7 kg (50 lb)

Online study aids are included with the course to help you prepare for the written exam: electronic flash cards, quiz questions, videos and activities based on content from the BICSI *Information Technology Systems Installation Methods Manual (ITSIMM)*.

Note: The BICSI Installer 1 exam is not included in the course fee. You must register for the exam separately. Complete an online application at **bicsi.org/installer1** (click on "Get Started"). See the exam handbook at **bicsi.org/in1handbook** for exam details.

Prerequisites & Preparation

Little or no experience is needed to sit for this class. However, BICSI strongly recommends reading the *ITSIMM* before coming to class and/or taking the exam. In addition, some students may benefit from completing the online ICT Fundamentals series through BICSI Connect prior to attending. For students who plan to take the nonrenewable certificate exam, BICSI recommends that examinees spend at least 50 hours studying the *ITSIMM*. Order the *ITSIMM* online at **bicsi.org/itsimm**.

About this Course

+ 4.5-day course
+ Certificate Exam is conducted in two parts: hands-on exam on the last day of class; written exam at a Pearson VUE Testing Center of examinee's choosing.
+ See **bicsi.org/IN101** for CECs.

Who Should Attend?

+ Individuals with little or no cabling experience
+ Anyone wishing to pursue a career in ICT cabling distribution
+ Individuals needing basic knowledge of and skills in cabling installation
+ Anyone planning to take the BICSI Installer 1 exam

What's Great About this

IN101 delivers an active learning experience with multiple hands-on activities, providing learners with marketable, real-world skills.

bicsi.org/installer1

COURSE MATERIALS

+ Information Technology Systems Installation Methods Manual (ITSIMM), hard copy and/or digital*
+ Internet-capable device
+ Personal or prescription safety glasses recommended

*Not included in course fee; order at **bicsi.org/itsimm**

BICSI INST1

BICSI Installer 1 Certificate Exam

Experience

There is no prior ICT industry installation experience requirement for individuals preparing to sit for the Installer 1 exam.

Knowledge & Skill Requirements

Exam candidates must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Have a general understanding of key U.S. codes and standards from the National Fire Protection Association® (NFPA) and Telecommunications Industry Association (TIA)

Suggested Study

+ IN101: Installer 1 Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ A minimum of 50 hours of independent study
+ ICT Design Fundamentals Program

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the certificate exam. Applicants must pass all portions of the hands-on performance exam and the written exam.

+ Hands-on Exam
  - Must complete six assigned tasks to industry standards
  - 20-minute-per-task time limit
  - Proctored exam at the end of class
  - Proctors will give pass/fail results on site*

*If an applicant fails to successfully complete one of the hands-on exam tasks, one same-day retake of the failed task will be allowed at no additional cost. If the applicant fails the same task twice, or after completing a task on a second attempt, the candidate fails a subsequent task, the hands-on exam must be rescheduled.

+ Written Exam
  - 75 knowledge- and application-based questions drawn from BICSI's *ITSIMM*
  - Closed-book, multiple-choice
  - Two-hour timed exam
  - Exam proctored at a Pearson VUE Testing Center*

*Visit pearsonvue.com/bicsi for a testing location near you.

Nonrenewable

+ The Installer 1 certificate is valid for three years.
+ The BICSI Installer 1 certificate is not renewable. As a next step, BICSI suggests pursuing the BICSI Installer 2, Copper and/or BICSI Installer 2, Optical Fiber credentials.

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at **bicsi.org/installer1** (click on "Get Started"). See the exam handbook at **bicsi.org/in1handbook** for exam details. The exam fee is not included in the course fee.

bicsi.org/installer1

IN225: BICSI Installer 2, Copper Training

This course sets the foundation of a copper-based structured cabling system installation. The course begins with an overview of professionalism, copper transmission principles and general safety practices associated with working with copper cabling. A significant amount of course time will then be spent on BICSI best practices for the installation, termination and testing of copper cable.

Course Highlights

This course offers multiple opportunities for hands-on practice.

Activities include learning to:

+ Perform advanced IDC terminations (210 and GigaBIX)
+ Terminate STP cable to patch panels and wall outlets
+ Terminate coaxial cable using a BNC connector
+ Test copper cabling installations

Online study aids are included with the course to help you prepare for the written exam: electronic flash cards, quiz questions, videos and activities based on content from the BICSI *Information Technology Systems Installation Methods Manual (ITSIMM)*.

Note: The BICSI Installer 2, Copper exam is not included in the course fee. You must register for the exam separately. Complete an online application at **bicsi.org/in2copper** (click on "Get Started"). See the exam handbook at **bicsi.org/in2handbook** for exam details.

Knowledge & Skill Requirements

Participants must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Stand for extended periods of time (e.g., 30 minutes)
+ Climb ladders
+ Lift and carry items weighing ≈22.7 kg (50 lb)

See prerequisites and preparation on page 18.

About this Course

+ 4.5-day course
+ Certification Exam is conducted in two parts: hands-on exam on the last day of class; written exam at a Pearson VUE Testing Center of examinee's choosing.
+ See **bicsi.org/IN225** for CECs.

Who Should Attend?

+ ICT installers with at least one year of verifiable cabling experience
+ Anyone who wishes to expand their knowledge of the industry, learn new (copper installation) skills and continue to advance professionally
+ Level 1 Installers seeking the Installer 2, Copper credential
+ Individuals planning to sit for the BICSI Installer 2, Copper exam

bicsi.org/in2copper

COURSE MATERIALS

+ Information Technology Systems Installation Methods Manual (ITSIMM), hard copy and/or digital*
+ Internet-capable device
+ Personal or prescription safety glasses recommended

*Not included in course fee; order at **bicsi.org/itsimm**

Bicsi®
INSTC

IN225: BICSI Installer 2, Copper Training

Prerequisites & Preparation

Students of this class may wish to first attend IN101 or gain equivalent experience and knowledge through on-the-job-training. BICSI recommends that all students who take this class have at least one year of verifiable ICT industry installation experience within the last five years. For all individuals who plan to take the exam after the class, this one year of experience is a requirement for the exam, not a recommendation.

The skills in this course build on the basic skills and knowledge that an installer is likely to acquire during the first year on the job. For this reason, students will be expected to have basic knowledge of copper cabling media and know how to perform entry-level cabling installation tasks prior to attending class.

If you feel that you may not be fully prepared for this course, BICSI recommends that you complete the IN101 course first. IN101 covers these skills, as well as other foundational knowledge that will help you to succeed in IN225.

In addition, BICSI strongly recommends reading the *ITSIMM* before coming to class and/or taking the exam. For students who plan to take the exam, BICSI recommends that examinees spend at least 50 hours studying the *ITSIMM*. Order the *ITSIMM* online at bicsi.org/itsimm.

What's Great About This

IN225 prepares the learner to be an expert in structured copper cabling systems by building knowledge and skills that align to industry codes and standards through practical application.

bicsi.org/in2copper

BICSI Installer 2, Copper Certification Exam

Experience

To apply for the Installer 2, Copper exam, a minimum of one year of approved and verifiable ICT industry installation experience within the last five years is required. It is recommended that the individual have the Installer 1 certificate or an equal understanding of cabling installation practices.

Knowledge & Skill Requirements

Exam candidates must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Have a general understanding of key U.S. codes and standards from the National Fire Protection Association® (NFPA) and Telecommunications Industry Association (TIA)

Suggested Study

+ IN101: Installer 1 Training
+ IN225: Installer 2, Copper Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ A minimum of 50 hours of independent study

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the credentialing exam. Applicants must pass all portions of the hands-on performance exam and the written exam.

+ Hands-on Exam
  - Must complete six assigned tasks to industry standards
  - 20-minute-per-task time limit
  - Proctored exam at the end of class
  - Proctors will give pass/fail results on site*

*If an applicant fails to successfully complete one of the hands-on exam tasks, one same-day retake of the failed task will be allowed at no additional cost. If the applicant fails the same task twice, or after completing a task on a second attempt, the candidate fails a subsequent task, the hands-on exam must be rescheduled.

+ Written Exam
  - 100 knowledge- and application-based questions drawn from BICSI's *ITSIMM*
  - Closed-book, multiple-choice
  - Two-hour timed exam
  - Exam proctored at a Pearson VUE Testing Center*

*Visit pearsonvue.com/bicsi for a testing location near you.

Recertification Requirements

The Installer 2, Copper certification is valid for three years. Individuals wishing to recertify this credential have three years (after the exam is passed) to:

+ Earn a minimum of 15 BICSI-recognized CECs.
+ Submit proof of CECs, recertification application and recertification fee by expiration date.

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at **bicsi.org/in2copper** (click on "Get Started"). See the exam handbook at **bicsi.org/in2chandbook** for exam details. The exam fee is not included in the course fee.

bicsi.org/in2copper

U.S. MILITARY AND RESERVISTS: BICSI certification exams are eligible for GI Bill reimbursement **(bicsi.org/gibill)** and may also be eligible for the Credentialing Opportunities On-Line (COOL) Program **(bicsi.org/cool)**.

IN250: BICSI Installer 2, Optical Fiber Training

This course sets the groundwork for optical fiber-based structured cabling system installation. The course will open with an overview of professionalism, fiber transmission principles and the general safety practices related to optical fiber cabling. A significant amount of course time will then be spent on installation, splicing, termination and testing of optical fiber cable.

Course Highlights

This course offers multiple opportunities for hands-on practice.

Activities include learning to:

+ Install a cleave-and-crimp-style optical fiber connector
+ Install a scribe-and-polish-style optical fiber connector
+ Terminate STP cable to patch panels and wall outlets
+ Perform a fusion splice
+ Perform a mechanical splice
+ Test an optical fiber link
+ Evaluate an optical time domain reflectometer (OTDR) trace

Online study aids are included with the course to help you prepare for the written exam: electronic flash cards, quiz questions, videos and activities based on content from the BICSI *Information Technology Systems Installation Methods Manual (ITSIMM)*.

Note: The BICSI Installer 2, Optical Fiber exam is not included in the course fee. You must register for the exam separately. Complete an online application at **bicsi.org/in2fiber** (click on "Get Started"). See the exam handbook at **bicsi.org/in2fhandbook** for exam details.

Knowledge & Skill Requirements

Participants must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Stand for extended periods of time (e.g., 30 minutes)
+ Climb ladders
+ Lift and carry items weighing ≈22.7 kg (50 lb)

See prerequisites and preparation on page 21.

About This Course

+ 4.5-day course
+ Certification Exam is conducted in two parts: hands-on exam on the last day of class; written exam at a Pearson VUE Testing Center of examinee's choosing.
+ See **bicsi.org/IN250** for CECs.

Who Should Attend?

+ ICT installers with at least two years of verifiable cabling experience
+ Anyone who wishes to expand their knowledge of the industry,

bicsi.org/in2fiber

COURSE MATERIALS

+ Information Technology Systems Installation Methods Manual (ITSIMM), hard copy and/or digital*
+ Internet-capable device
+ Personal or prescription safety glasses recommended

*Not included in course fee; order at **bicsi.org/itsimm**

IN250: BICSI Installer 2, Optical Fiber Training

Prerequisites & Preparation

BICSI recommends that all students who take this class have at least two years of current ICT industry installation experience within the last five years. For all individuals who plan to take the exam after the class, two years of experience is a requirement for the exam, not a recommendation.

Because the skills in this course build on the basic abilities and knowledge that an installer is likely to acquire during the first two years on the job, students will be expected to have basic knowledge of optical fiber cabling media and to know how to perform entry-level cable installation tasks prior to enrolling in this class.

If you feel that you may not be fully prepared for this course, BICSI recommends that you complete the IN101 and/or IN225 courses prior to attending this class. IN101 covers the basic cable installation concepts and skills that will help you to succeed in IN250.

In addition, BICSI strongly recommends reading the *ITSIMM* before coming to class and/or taking the exam. For students who plan to take the exam, BICSI recommends that examinees spend at least 50 hours studying the *ITSIMM*. Order the *ITSIMM* online at **bicsi.org/itsimm.**

What's Great About This

This course provides the learner with more advanced installation skills and a deeper knowledge of structured cabling systems and optical fiber cabling.

bicsi.org/in2fiber

BiCSi
INSTF

BICSI Installer 2, Optical Fiber Certification Exam

Experience

To apply for the Installer 2, Optical Fiber exam, a minimum of two years of approved and verifiable ICT industry installation experience within the last five years is required. It is recommended that the individual have the Installer 1 certificate or an equal understanding of cabling installation practices.

Knowledge & Skill Requirements

Exam candidates must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Have a general understanding of key U.S. codes and standards from the National Fire Protection Association® (NFPA) and Telecommunications Industry Association (TIA)

Suggested Study

+ IN101: Installer 1 Training
+ IN250: Installer 2, Optical Fiber Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ A minimum of 50 hours of independent study

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the credentialing exam. Applicants must pass all portions of the hands-on performance exam and the written exam.

+ Hands-on Exam

  - Must complete six assigned tasks to industry standards
  - 20-minute-per-task time limit
  - Proctored exam at the end of class
  - Proctors will give pass/fail results on site*

*If an applicant fails to successfully complete one of the hands-on exam tasks, one same-day retake of the failed task will be allowed at no additional cost. If the applicant fails the same task twice, or after completing a task on a second attempt, the candidate fails a subsequent task, the hands-on exam must be rescheduled.

+ Written Exam

  - 100 knowledge- and application-based questions drawn from BICSI's *ITSIMM*
  - Closed-book, multiple-choice
  - Two-hour timed exam
  - Exam proctored at a Pearson VUE Testing Center*

*Visit pearsonvue.com/bicsi for a testing location near you.

Recertification Requirements

The Installer 2, Optical Fiber certification is valid for three years.

Individuals wishing to recertify this credential have three years (after the exam is passed) to:

+ Earn a minimum of 15 BICSI-recognized CECs.

+ Submit proof of CECs, recertification application and recertification fee by expiration date.

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at bicsi.org/in2fiber (click on "Get Started"). See the exam handbook at bicsi.org/in2fhandbook for exam details. The exam fee is not included in the course fee.

bicsi.org/in2fiber

U.S. MILITARY AND RESERVISTS: BICSI certification exams are eligible for GI Bill reimbursement **(bicsi.org/gibill)** and may also be eligible for the Credentialing Opportunities On-Line (COOL) Program **(bicsi.org/cool)**.

TE350: BICSI Technician Training

This course provides the necessary skillset of a structured cabling systems technician. A significant amount of course time will be spent on troubleshooting copper and optical fiber cable installations. In addition, this course will cover project planning and implementation at the technician level. Additional topics will include site safety, site surveys, blueprint reading, bonding and grounding (earthing) and firestopping practices.

Course Highlights

This course offers multiple opportunities for hands-on practice.

Activities include learning to:

+ Interpret blueprints
+ Apply a standards-compliant labeling scheme (e.g., ANSI/TIA-606)
+ Troubleshoot a UTP link/channel with a certification test set
+ Troubleshoot an optical fiber channel with an optical time domain reflectometer (OTDR)

Online study aids are included with the course to help you prepare for the written exam: electronic flash cards, quiz questions, videos and activities based on content from the BICSI *Information Technology Systems Installation Methods Manual (ITSIMM).*

Note: The BICSI Technician exam is not included in the course fee. You must register for the exam separately. Complete an online application at **bicsi.org/technician** (click on "Get Started"). See the exam handbook at **bicsi.org/techhandbook** for exam details.

Knowledge & Skill Requirements

Participants must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Stand for extended periods of time (e.g., 30 minutes)
+ Climb ladders
+ Lift and carry items weighing ≈22.7 kg (50 lb)

See prerequisites and preparation on page 24.

About This Course

+ 4.5-day course
+ Certification Exam is conducted in two parts: hands-on exam on the last day of class; written exam at a Pearson VUE Testing Center of examinee's choosing.
+ See **bicsi.org/TE350** for CECs.

Who Should Attend?

+ Highly experienced ICT installers with at least three years of verifiable cabling experience
+ Anyone who wishes to expand their knowledge of the industry, learn new skills and continue to advance professionally
+ Individuals planning to sit for the BICSI Technician exam

bicsi.org/technician

COURSE MATERIALS

+ Information Technology Systems Installation Methods Manual (ITSIMM), hard copy and/or digital*
+ Internet-capable device
+ Personal or prescription safety glasses recommended

*Not included in course fee; order at **bicsi.org/itsimm**

BICSI TECH®

TE350: BICSI Technician® Training

Prerequisites & Preparation

BICSI recommends that all students who take this class have at least three years of current ICT industry installation experience within the last five years. For all individuals who plan to take the exam after the class, this is a requirement, not a recommendation.

This course builds on the skills and knowledge covered in the Installer 2, Copper and Installer 2, Optical Fiber training courses. Although completing these courses prior to attending is not a requirement, BICSI highly recommends that students complete these courses and/or obtain the Installer 2, Copper and Installer 2, Optical Fiber credentials prior to attending this class.

If an individual does not currently hold both the Copper and Optical Fiber Installer 2 credentials, or the Installer level 2 credential, that individual will receive four additional hands-on tasks and 40 additional written exam questions focused on copper and optical fiber topics to complete as part of the process.

If you feel that you may not be fully prepared for this course, BICSI recommends that you complete IN225 (recommended for learners with one year of experience) and IN250 (recommended for learners with two years of experience) prior to attending this class, and complete the exams to earn the credentials prior to class.

In addition, BICSI strongly recommends reading the *ITSIMM* before coming to class and/or taking the exam. For students who plan to take the exam, BICSI recommends that examinees spend at least 50 hours studying the *ITSIMM*. Order the *ITSIMM* online at **bicsi.org/itsimm**.

What's Great About This

This course will help students successfully lead an installation group or team using project management skills.

bicsi.org/technician

"The Technician credential has given me greater confidence both professionally and personally. I can accurately address situations in the field that may be unsafe or incorrect installation practices and create a resolution on the fly."

Brian Posivak, INSTC, INSTF, TECH,
Lehigh University, Bethlehem, Pennsylvania, USA

BICSI Technician Certification Exam

Experience

To apply for the Technician exam, a minimum of three years of approved and verifiable ICT industry installation experience within the last five years is required. It is recommended that the individual have both the Installer 2, Copper and Installer 2, Optical Fiber credentials.

Knowledge & Skill Requirements

Exam candidates must be able to:

+ Distinguish between different colors
+ Possess manual dexterity to complete fine motor tasks
+ Have a general understanding of key U.S. codes and standards from the National Fire Protection Association® (NFPA) and Telecommunications Industry Association (TIA)

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the credentialing exam. Applicants must pass all portions of the hands-on performance exam and the written exam.

+ Hands-on Exam
    - Must complete six assigned tasks to industry standards
    - 20-minute-per-task time limit
    - Proctored exam at the end of class
    - Proctors will give pass/fail results on site*

*If an applicant fails to successfully complete one of the hands-on exam tasks, one same-day retake of the failed task will be allowed at no additional cost. If the applicant fails the same task twice, or after completing a task on a second attempt, the candidate fails a subsequent task, the hands-on exam must be rescheduled.

+ Written Exam
    - 100 knowledge- and application-based questions drawn from BICSI's *ITSIMM*
    - Closed-book, multiple-choice
    - 2½-hour timed exam
    - If an individual does not hold both the Copper and Optical Fiber Installer 2 credentials, or the Installer level 2 credential, the written exam will have an additional 40 questions focused on copper and optical fiber topics (140 questions total).
    - Exam proctored at a Pearson VUE Testing Center*

*Visit pearsonvue.com/bicsi for a testing location near you.

Recertification

The Technician certification is valid for three years.

Individuals wishing to recertify this credential have three years (after the exam is passed) to:

+ Earn a minimum of 18 BICSI-recognized CECs.
+ Submit proof of CECs, recertification application and recertification fee by expiration date.

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at bicsi.org/technician (click on "Get Started"). See the exam handbook at bicsi.org/techhandbook for exam details. The exam fee is not included in the course fee.

Suggested Study

+ IN101: Installer 1 Training
+ IN225: Installer 2, Copper Training
+ IN250: Installer 2, Optical Fiber Training
+ TE350: Technician Training
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
+ A minimum of 50 hours of independent study

bicsi.org/technician

U.S. MILITARY AND RESERVISTS: BICSI certification exams are eligible for GI Bill reimbursement **(bicsi.org/gibill)** and may also be eligible for the Credentialing Opportunities On-Line (COOL) Program **(bicsi.org/**

ITSIMM, 7th Edition
Information Technology Systems Installation Methods Manual

Building on the solid foundations of its internationally recognized predecessor, the 7th edition of BICSI's *Information Technology Systems Installation Methods Manual (ITSIMM)* continues to be the go-to guide for the knowledge and methods for performing the wide range of installation tasks safely and effectively.

The 7th edition *ITSIMM* reflects recent trends and advancements within ICT cabling and applications, such as Category 8/Class I/II cabling, adoption of data center/mission-critical facility methods within common installations, and the increasing commonality of support required by systems that sustain building functions.

At the core of the manual are the specifics of performing installation, from laying out communications spaces and installation requisite pathways, to pulling, terminating and testing cabling. Important topics of firestopping and bonding cabling infrastructure to the grounding system are also present, continuing to focus on providing safe systems after installation is complete.

The *ITSIMM*, 7th edition, concludes with a revised and updated section on specialty systems, such as building automation, ESS and wireless, as well as chapters on project management and retrofits.

The *ITSIMM*, in conjunction with the Installer/Technician series courses, serves as a detailed reference for all BICSI Cabling Installation Program exams.

Contents

The *ITSIMM*, 7th edition, is comprised of 11 chapters, three appendices, a detailed and comprehensive glossary and chapter-specific bibliography. Topics include:

+ Principles of Transmission
+ Structured Cabling Systems
+ General Safety Practices
+ Space Preparation and Cabling Support Systems
+ Cable Installation
+ Testing Cable and Troubleshooting
+ Firestopping Practices
+ Bonding and Grounding (Earthing) and Electrical Protection
+ Specialty Systems Installation
+ Project Management
+ Retrofits and Upgrades
+ Codes, Standards, Regulations and Organizations
+ Legal Considerations
+ Project Documentation Examples

Who Should Purchase?

+ Cabling installers

+ Students of BICSI installation courses*

+ Those working to achieve any of the BICSI Installer or Technician credentials

*The *ITSIMM* must be purchased for IN101, IN225, IN250 and TE350 courses.

ISBNs:
1-928886-70-1 (print)
1-928886-71-X (digital)

bicsi.org/itsimm

ICT Installation Practices Field Guides
Volume 1 – General Cabling
Volume 2 – Copper Cabling

BICSI's *ICT Installation Practices Field Guides* are the must-have companions for every ICT and low-voltage cabling installer and technician. Sized for your pocket or toolbox, each volume is arranged to quickly place the information you need at your fingertips.

Volume 1 – General Cabling focuses on the tasks and procedures for setting up the site and preparing pathways and spaces for the actual cable. Common safety practices, protective equipment and firestopping are also included
to keep you, your team and the site safe from harm.

Volume 2 –Copper Cabling focuses on just that—balanced twisted-pair and coaxial communication cabling. Throughout its pages you will find everything likely to come up on the job site, from cable classification, cable construction, horizontal and backbone applications, performance specifications, length limitations, termination, troubleshooting and much more.

***Coming soon!* Volume 3 – Optical Fiber Cabling** and everything you

Who Should Purchase?

+ ICT cabling and infrastructure installers

+ Installation professionals involved with IP-enabled systems

+ ICT and installation contractors

+ Facilities and building personnel

bicsi.org/guide

ANSI/BICSI N1-2019
Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure

Don't let installation be the weakest link in your ICT system. ANSI/BICSI N1 describes minimum requirements and procedures for installing the infrastructure for telecommunications and ICT systems, including cabling, cabling supports and testing. BICSI N1 also provides the tenets of a "neat and workmanlike manner," as required by contracts and standards such as ANSI/NFPA 70 and the *National Electrical Code® (NEC®)*.

Who Should Purchase?

+ All individuals who need knowledge of primary installation requirements for ICT and IP-enabled systems + ICT installers and technicians + Installers of IP-enabled systems, such as AV, ESS and building automation + Project managers + System inspectors

bicsi.org/n1

ICT CABLING INSTALLATION PROGRAM

ANSI/BICSI N2-17

Practices for the Installation of Telecommunications and ICT Cabling Intended to Support Remote Power Applications

ANSI/BICSI N2-17, *Practices for the Installation of Telecommunications and ICT Cabling Intended to Support Remote Power Applications*, focuses on the installation practices specific to ICT cabling for powering devices by specifications such as PoE, PoH and HDBaseT. As changes in systems, technologies and safe implementation requirements are occurring on a frequent basis, ANSI/BICSI N2-17 is under continuous maintenance to provide the current and relevant information for remote powering.

Contents

+ Introduction
+ Scope
+ Required Standards and Documents
+ Definitions, Acronyms, Abbreviations and Units of Measurement
+ Bundle Sizes
+ Recommended Practices
+ Appendix A: Related Documents (Informative)

Who Should Purchase?

+ All individuals who need knowledge of primary installation requirements for ICT and IP-enabled systems

+ ICT installers and technicians

+ Installers of IP-enabled systems, such as AV, ESS and building automation

+ Project managers

+ System inspectors

FREE DIGITAL DOWNLOAD!

bicsi.org/n2

ANSI/NECA/BICSI 607-2011

Standard for Telecommunications Bonding and Grounding Planning and Installation Methods for Commercial Buildings

An effective telecommunications bonding and grounding system can prevent injury and equipment damage. With the complexity of today's infrastructure allowing little margin for outages, any system, including the grounding and bonding network, can be the weakest link.

NECA/BICSI 607 specifies aspects of planning and installation of telecommunications bonding and grounding systems. While this standard aligns with related standards, such as ANSI/TIA-607-C, *Telecommunications Bonding and Grounding (Earthing) for Customer Premises* and ISO/IEC 30129:2015, *Information Technology — Telecommunications Bonding Networks for Buildings and Other Structures,* additional requirements and information for components and connectors of these systems are also included. And because the best design can be undone by poor implementation, a majority of NECA/BICSI 607 details installation methods and practices to minimize potential grounding system failure.

¡En Español También! bicsi.org/español

Who Should Purchase?

+ All individuals who need knowledge of primary installation requirements for ICT and IP-enabled systems

+ ICT installers and technicians

+ Installers of IP-enabled systems, such as AV, ESS and building automation

+ Project managers

+ System inspectors

bicsi.org/607

Registered Communications Distribution Designer®

Smarter, Stronger Building Design

For 35 years, the BICSI Registered Communications Distribution Designer (RCDD®) credential has remained one of the most coveted designations available in the area of telecommunications and ICT distribution design.

Recognized around the world, RCDDs have been instrumental in designing and overseeing the implementation of telecommunications projects of all sizes, from home and small business installations to airports, transportation hubs and arenas. Their work is on display at some of the most famous buildings in the world, including the White House and the U.S. Capitol Building and Visitor Center.

An RCDD understands the importance of achieving a flexible, cost-effective, future-ready system during every stage of the project. They have demonstrated expertise in the design, integration and implementation of telecommunications and ICT systems, and the ability to initiate and manage a project from the original request to the final closeout.

Because of the skill, expertise and dedication to their craft, RCDDs are required by many private and government organizations as part of the bidding and construction criteria all over the world, including the U.S. Department of Defense,* Camp Humphreys—a U.S. military base in Korea, the U.S. Department of Veteran Affairs and the Julius Nyerere International Airport in Tanzania, Africa.

The RCDD credential is achieved by passing a comprehensive exam rooted in the *Telecommunications Distribution Methods Manual (TDMM)*.

*UFC 3-580-01 requires an RCDD to sign off on design and test plans from contractors.

Areas of Knowledge

+ Principles of transmission and electromagnetic compatibility
+ Structured cabling systems and components
+ Firestop systems
+ Bonding and grounding (earthing) of ICT infrastructure
+ Power distribution
+ Testing and administration of structured cabling
+ Wireless LAN and distributed antenna system (DAS) networks
+ Outside plant and campus cabling
+ IP-enabled building systems
  - Audiovisual systems
  - Building automation systems
  - Electronic safety and security
+ Applied ICT facility design
  - Data centers
  - Health care
  - Residential cabling
+ Project management

BEST TELECOMMUNICATIONS CERTIFICATIONS 2019

Top 5 certifications searched from leading job boards

- RCDD (BICSI)
- iNARTE Telecommunications Engineer
- IPEP (SCTE)
- NCTI Master Technician (NCTI)
- CTNS (TCO)

Source: businessnewsdaily.com

68
31 29
15
1,152

ONCE AGAIN THE RCDD CREDENTIAL IS #1

Bicsi® RCDD

RCDD
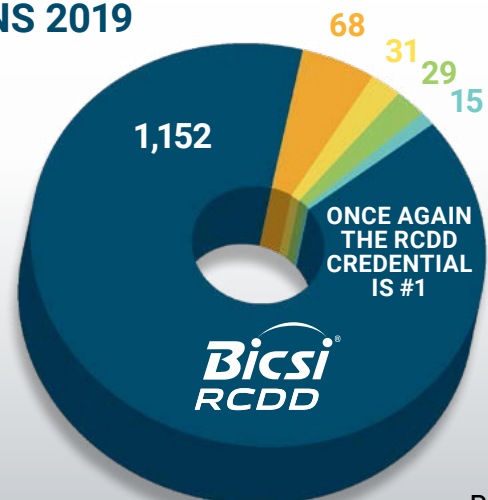
DD101: Foundations of Telecommunications Distribution Design

ICT systems are integral to all facets of society. As such, professionals across numerous industries and trades outside of ICT find benefit in understanding the requirements and needs of these systems. Because the reliance on ICT systems affects safety, security, business and living functions to such a large extent, improperly designed, implemented or operated systems are unacceptable.

This course provides an introduction to the key concepts, components and elements of an ICT infrastructure.

After completing this course, you will be able to:

+ Identify the components of structured cabling systems
+ Identify the types of media used in the telecommunications industry
+ Explain why bonding and grounding is a critical component for ICT systems and infrastructure
+ Recognize the need for, and types of, firestopping systems
+ Identify codes and standards relative to the ICT industry
+ Describe the role project management plays in the ICT industry

Course Highlights

+ Principles of transmission
+ Structured cabling systems
+ Codes, standards and regulations
+ Media
+ Firestopping
+ Cabling system development
+ Project management
+ ICT cables and connecting hardware
+ Bonding and grounding

End of Course Assessment

To earn CECs for this course, you must pass a 50-question timed, online end of course assessment (included in course fee). Once you have registered, you have 90 days to access the course and pass the assessment. You must receive a grade of 75 percent or higher on the final assessment to receive your certificate and to satisfy the prerequisite for more advanced courses.

About This Course

+ BICSI CONNECT online course*
+ 90 days to complete course
+ 14 CECs

Who Will Benefit?

+ Individuals new to the ICT industry
+ Individuals who interact with ICT designers and installers
+ Individuals looking to earn the RCDD credential
+ Those in professions and trades who interact with ICT systems
  - Architects
  - Building facility managers
  - Electrical inspectors
  - General contractors
  - Network administrators
  - Building system (e.g., security, AV, HVAC) integrators and installers

bicsi.org/dd101

REQUIRED MATERIALS

+ Telecommunications Distribution Methods Manual (TDMM), to complete reading assignments for every module**

Not included in course fee; order at **bicsi.org/tdmm

RECOMMENDED SYSTEM REQUIREMENTS

See page 12.

*All BICSI CONNECT courses require a computer, and are nonrefundable and nontransferable.

DD102: Designing Telecommunications Distribution Systems

DD102 is an intensive, hands-on course focused on the design of structured cabling systems. Offering hands-on skill building activities from day one, this knowledge-intensive course instructs you in real-world tasks, preparing you for design roles outside of the classroom. Assignments from the award-winning *Telecommunications Distribution Methods Manual (TDMM)* augment your learning, allowing you to prepare questions for the classroom.

Through the use of case studies, schematic and construction drawings, and real-life scenarios, you will learn to design codes and standards-compliant telecommunications infrastructure, beginning where the cabling enters the building to any telecommunications environment within the building. In addition to structured cabling, all facets of design for the support infrastructure, including telecommunications spaces, pathways, bonding and grounding, and firestopping are included in the course.

DD102 has been structured to maximize your take-away from the class. Students work together to complete a final group project, allowing immediate use of new knowledge and skills learned in the classroom.

About This Course

+ 5-day course
+ 37 CECs

Who Should Attend?

+ New designers interested in the fundamentals of commercial design or existing designers who want to expand their standards-based knowledge and design skills.
+ Professionals responsible for designing IP-enabled building systems (e.g., security, AV, HVAC)
+ Individuals preparing to take the RCDD exam
+ Individuals looking for a review of telecommunications distribution systems

Course Highlights

+ Codes, standards and regulations
+ Telecommunications pathways and spaces
+ Backbone and horizontal distribution systems
+ Bonding and grounding (earthing)
+ Firestopping
+ Telecommunications administration
+ Outside Plant (OSP) and campus cabling

Prerequisites & Preparation

DD102 is designed for those who have a minimum of two years of experience in the design and specifications of cabling infrastructure systems. If you do not meet the requirements, BICSI strongly recommends that you complete DD101 prior to enrolling in DD102.

bicsi.org/dd102

REQUIRED MATERIALS

+ Telecommunications Distribution Methods Manual (TDMM), print or digital.**
+ Internet-capable device

Not included in course fee; order at **bicsi.org/tdmm

BICSI RCDD

RCDD Online Test Preparation

Studies suggest that test prep courses can help raise a test score by up to 25 percent. BICSI designed the Registered Communications Distribution Designer (RCDD) Online Test Preparation course to give you access to the highest quality training materials available—from flash cards, videos and email access to successful RCDDs in the business. The RCDD Online Test Preparation course provides everything you need to help you be successful on the RCDD exam.

The RCDD Online Test Preparation course is the only BICSI-approved RCDD exam preparation class.

Course Highlights

+ **Downloadable Strategy Guide Booklet:** gain an overview of the exam, including the test format and applicable chapters; learn key formulas needed to help you pass the exam; receive study tips.

+ **Electronic Exercises and Review Games:** take part in interactive games and strategies to help you memorize key concepts.

+ **Practice Exams:** take two 90-minute practice exams; feedback will be given highlighting areas that need improvement.

+ **Professionally Recorded Videos:** download lessons from experienced RCDDs; lessons target: horizontal distribution, backbone distribution and telecommunications spaces.

What's Great About This Course?

Only the RCDD Online Test Preparation course offers you a combination of gaming practice, recorded lessons, online flash cards, a downloadable strategy booklet and practice questions.

About This Course

+ BICSI CONNECT online course*
+ Access to course for one year from date of purchase

Who Will Benefit?

+ Individuals preparing to take the RCDD exam
+ Individuals who want a review of telecommunications distribution systems

Prerequisites & Preparation

DD101 and DD102 are strongly recommended prior to taking the RCDD Online Test Preparation course.

bicsi.org/rcdd

Purchase the *TDMM* and the RCDD Online Test Preparation course at the same time and receive a 15% DISCOUNT OFF THE *TDMM*!
bicsi.org/rcdd15

REQUIRED MATERIALS

+ Telecommunications Distribution Methods Manual (TDMM).**

Not included in course fee; order at **bicsi.org/rcdd15

SYSTEM REQUIREMENTS

Internet Explorer 10.

*All BICSI CONNECT courses require a computer, and are nonrefundable and nontransferable.

RCDD Certification Exam

Eligibility Requirements

Applicants must meet one of the following eligibility options in order to apply for the RCDD certification exam.

Option 1: Two years of verifiable full-time work experience in ICT design **AND** a current BICSI certification holder as BICSI TECH™, RTPM®, DCDC® or OSP™.

Option 2: Two years of verifiable full-time equivalent work experience in ICT design **AND** completion of two years of higher education course work in ICT. Two years of higher education course work in ICT may include:

+ STEM or trade school
+ Two-year degree

+ ICT and industry-related programs, apprenticeships or certifications
+ Military training equivalent

Evidence of completion of higher education course work includes:

+ Certificates
+ Diplomas

+ Registrar's documentation
+ Other bona fide documents

Option 3: Five years of verifiable ICT experience.

Note: BICSI reserves the right to determine what is approved curriculum and approved ICT license/certification.

Suggested Study

+ DD101: Foundations of Telecommunications Distribution Design (optional)
+ DD102: Designing Telecommunications Distribution Systems (optional)
+ RCDD Online Test Preparation Course (optional)
+ *TDMM* Flash Cards (online)
+ *Telecommunications Distribution Methods Manual (TDMM)*
+ 125 to 150-plus hours of independent study

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the credentialing exam.

+ Computer-based**
+ 100 questions drawn from BICSI's *TDMM*

+ Closed-book and multiple-choice
+ 2½-hour timed exam

**Visit pearsonvue.com/bicsi for a testing location near you.

Recertification

The RCDD certification is valid for three years.

RCDDs are required to continue their education in order to recertify their RCDD credential. Within a three-year period (after the exam is passed), RCDDs must:

+ Earn a minimum of 45 BICSI-recognized CECs.
+ Attend at least one BICSI-recognized conference.***
+ Submit proof of CECs, recertification application and recertification fee by the expiration date.

***A BICSI-recognized conference that will satisfy the mandatory conference attendance credit as outlined in the CEC Policy.

bicsi.org/rcdd

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at **bicsi.org/rcdd** (click on "Get Started"). See the exam handbook at **bicsi.org/rcddhandbook** for exam details. The exam fee is not included in the course fee.
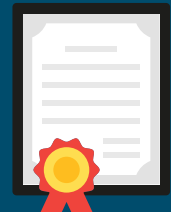

DISTRIBUTION DESIGN COURSES + ***TDMM*** + **RCDD EXAM** = **RCDD CERTIFICATION**

TDMM, 13th Edition
Telecommunications Distribution Methods Manual

The *Telecommunications Distribution Methods Manual (TDMM)* is BICSI's flagship manual, a true world resource in global best practices, as well as the basis for the Registered Communications Distribution Designer® (RCDD®) exam. The *TDMM* provides deep reference information on the standards and codes that impact our readership, providing readers with the guidelines to execute future-ready projects with reduced costs. The *TDMM* provides critical design information and practices for today's and tomorrow's networks.

In addition to updated technology practices for data networks, the 13th edition *TDMM* incorporates new information to address the issues and solutions emerging for tomorrow's networks, including distributed antenna systems (DAS), passive optical networks (PON) and IP Infrastructure for AV systems.

Whether a newcomer or seasoned veteran to ICT system design, the *TDMM* is an indispensable reference that completes any ICT library, available as a two-volume printed manual or via digital download.

Who Should Purchase?

+ Anyone in the ICT industry

+ Beginner and experienced designers

+ Consultants

+ End users

+ Engineers

+ Students taking BICSI courses*

+ RCDD exam candidates

*The *TDMM* must be purchased for DD101, DD102 and RCDD Online Test Preparation courses.

ISBNs:
1-928886-64-7 (print)
1-928886-66-3 (digital)

bicsi.org/tdmm

"My RCDD credential and the BICSI organization have given me not only a job, but a career. I have growth and plans that I never thought possible."

Fernando Chavez, RCDD, DCDC,
Senior Design Consultant, Las Vegas, Nevada, USA

Contents

The *TDMM*, 13th edition, consists of 2,100-plus pages in two volumes, with 21 chapters and five appendices, as well as a comprehensive glossary.

+ Principles of Transmission
+ Electromagnetic Compatibility
+ Telecommunications Spaces
+ Backbone Distribution Systems
+ Horizontal Distribution Systems
+ ITS Cables and Connecting Hardware
+ Firestop Systems
+ Bonding and Grounding (Earthing)
+ Power Distribution
+ Telecommunications Administration
+ Field Testing of Structured Cabling
+ Outside Plant
+ Audiovisual Systems
+ Building Automation Systems
+ Data Networks
+ Wireless Networks

+ Electronic Safety and Security
+ Data Centers
+ Health Care
+ Residential Cabling
+ Business Development and Project Management
+ Appendix A: Codes, Standards, Regulations and Organizations
+ Appendix B: Network Interfaces and Demarcation Points in the United States
+ Appendix C: Regulations and Standards for Emissions and Immunity
+ Appendix D: Mechanical, Ingress, Climatic/Chemical and Electromagnetic Considerations
+ Appendix E: Legal Considerations for the ITS Distribution Designer

BICSI's TDMM, 13th edition, received the prestigious Award of Distinction and was named "Best of Show" by the Society for Technical Communication (STC). The TDMM was also recognized internationally with the STC Award of Merit.

bicsi.org/tdmm

ONLINE *TDMM* FLASH CARDS**

Test your knowledge of the TDMM and study for the RCDD exam with online TDMM flash cards, exclusively from BICSI. With 1,800 questions, the cards are divided by chapter and include answers and page references for each card.

**Operates on Internet Explorer 10 or a flash-supported browser.

DCDC

Data Center Design Consultant™
Complex, Critical Data Center Design and Implementation

bicsi.org/dcdc

Data centers are essential to the way we communicate, transport and store information in the 21st century. With an endless demand for increased capacity, efficiency and higher levels of utilization, designing data centers and bringing them online continues to grow in complexity.

Today's data center designers must have comprehensive knowledge of mechanical, electrical and telecommunications systems, as well as a familiarity with reliability, security and building requirements.

The BICSI Data Center Design Consultant (DCDC™) program has been updated to incorporate the evolving skillset of an effective and proficient data center designer. While design is still a central part of a DCDC credential holder's job description, it was found that DCDCs are being utilized within all facets of data centers, including strategic planning, operations, management and evaluation.

The DCDC credential recognizes individuals who have demonstrated the knowledge and ability to apply it over multiple facets within data center design and construction. DCDC candidates are individuals involved in the planning, implementing and making of critical decisions regarding data centers.

The DCDC credential is achieved by passing a comprehensive exam based on the exam blueprint. The exam is developed using the newly updated ANSI/BICSI 002-2019, *Data Center Design and Implementation Best Practices* standard and the new *Essentials of Data Center Projects* as references.

Areas of Knowledge

+ Design process
+ Risk analysis
+ Architectural and space planning
+ Site selection
+ Information technology
+ Electrical systems
+ Mechanical systems
+ Ancillary systems
+ Commissioning
+ Data center operations and maintenance
+ Sustainable data centers

+ NEW STANDARDS
+NEW MANUAL
+UPDATED COURSES
+MODIFIED EXAM AND RECERTIFICATION REQUIREMENTS

DCDC COURSES + **DATA CENTER STANDARD & *EDCP*** + **DCDC EXAM** = **DCDC CERTIFICATION**
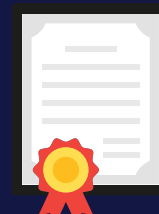
DC101: Introduction to Data Center Design

BICSI's DC101: Introduction to Data Center Design is an online, self-paced course and the first step in the Data Center Design Consultant (DCDC) career path. Based on ANSI/BICSI 002, this course covers foundational knowledge of data center design, including an overview of the data center design process, design criteria, systems, components, sustainability, commissioning and maintenance. DC101 consists of 11 modules filled with engaging interactions, knowledge checks and gaming activities designed to help you retain basic knowledge.

About This Course

+ BICSI CONNECT online course*
+ 90 days to complete course
+ 14 CECs

Course Objectives

+ Select the appropriate availability class based on the site requirements
+ Locate a suitable site to construct a data center
+ Identify best practices used when building a new data center or updating an existing data center
+ Apply sustainability concepts to a data center design
+ Identify the systems housed in a data center
+ Examine the phases in a commissioning process

End of Course Assessment

The DC101 course includes a comprehensive end of course assessment with 50 questions. You will be given one hour to complete and submit your answers. You will be able to take the assessment as many times as you need to master the content within 90 days. A score of 75 percent or higher must be achieved to satisfy course completion and earn CECs.

Who Will Benefit?

+ Anyone entering a career involving the planning, implementing, operating and making of critical data center decisions
+ Architects
+ Consultants
+ Designers
+ Engineers
+ Facility professionals
+ IT professionals
+ New data center professionals
+ Project managers
+ Telecommunications professionals

bicsi.org/dc101

COURSE MATERIALS

+ Access to the ANSI/BICSI 002-2014, Data Center Design and Implementation Best Practices standard is strongly suggested for reference during class**

Effective December 2019, updated course to reflect ANSI/BICSI 002-2019 standard.

Not included in course fee; order at **bicsi.org/dcdc

RECOMMENDED SYSTEM REQUIREMENTS

See page 12.

*All BICSI CONNECT courses require a computer, and are nonrefundable and nontransferable.

BICSI
DCDC

DC102: Applied Data Center Design and Best Practices

BICSI's DC102: Applied Data Center Design and Best Practices course is a five-day course that provides an in-depth review of best practices for designing data centers. In this course you will be introduced to various data center infrastructure systems. In addition, you will have an opportunity to apply what you have learned by engaging in case studies, discussions and real-world scenarios, as well as gain practical application in ICT data center design best practices. After completing this course, you should be able to design a data center based on a set of given requirements; this will include both new and retrofit designs.

In addition to data center design, the course will also include life safety practices such as grounding and bonding to ensure that you can account for these issues when designing a data center. On the last day of the course, you will be able to evaluate your learning through a final project and a comprehensive course assessment.

Course Highlights

The DC102 course will address the following areas:

+ Data center design process
+ Site location
+ Building and support spaces
+ Computer room layout
+ Electrical systems
+ Bonding and grounding (earthing)
+ Mechanical systems
+ Telecommunications and IT
+ Ancillary systems
+ Security systems
+ Fire protection systems
+ Building automation systems (BAS)
+ Lighting
+ Security planning
+ Commissioning

Prerequisites & Preparation

DC102 is designed for those who have a minimum of two years of experience in data center design and/or construction. If you do not meet the experience requirements, BICSI strongly recommends that you complete DC101 prior to enrolling in DC102.

About This Course

+ 5-day course
+ 33 CECs

Who Should Attend?

+ Anyone involved in planning, implementing, operating and making critical data center decisions
+ Architects
+ Data center professionals
+ Designers
+ Engineers
+ Facility managers
+ IT professionals
+ Project managers
+ Telecommunications professionals

What's Great About This

A variety of hands-on exercises, including a final group project, will help reinforce material and prepare students for real-world scenarios.

bicsi.org/dc102

REQUIRED MATERIALS

+ ANSI/BICSI 002-2019, Data Center Design and Implementation Best Practices*
+ Internet-capable device

*Not included in course fee; order at **bicsi.org/002**

DCDC Online Test Preparation

The Data Center Design Consultant (DCDC) Online Test Preparation course is a self-study course to help you prepare for the DCDC exam. Because it is a self-study course, you can complete each module on your own time and practice as often as you need in order to master each concept. The DCDC Online Test Preparation course is aligned with the ANSI/BICSI 002, *Data Center Design and Implementation Best Practices* standard. After completing this course, you will be better prepared to take the DCDC exam.

Course Highlights
The course will cover all core chapters identified within the scope of the DCDC exam.

Course topics include:
+ Architectural and space planning
+ Site selection
+ Electrical systems
+ Mechanical systems
+ Ancillary systems
+ Information technology
+ Commissioning
+ Data center operations and maintenance
+ Sustainability of data centers
+ Design process
+ Risk analysis

Prerequisites & Preparation
DC101 and DC102 are strongly recommended prior to taking the DCDC Online Test Preparation course.

What's Great About This Course?
The DCDC Online Test Preparation course offers you a combination of gaming practice, video tutorials, online flash cards and practice questions.

About This Course

+ BICSI CONNECT online course*
+ Access to course for one year from date of purchase

Who Will Benefit?

+ Individuals preparing to take the DCDC exam
+ Individuals who want a review of data center design

bicsi.org/dcdc

Purchase the ANSI/BICSI 002 standard and the DCDC Online Test Preparation course at the same time and receive a
15% DISCOUNT

bicsi.org/dcdc15

REQUIRED MATERIALS

+ **ANSI/BICSI 002-2014,** Data Center Design and Implementation Best Practices**

Effective December 2019, updated course to reflect ANSI/BICSI 002-2019 standard.

Not included in course fee; order at **bicsi.org/dcdc15

RECOMMENDED SYSTEM REQUIREMENTS

See page 12.

*All BICSI CONNECT courses require a computer, and are nonrefundable and nontransferable.

DCDC Certification Exam

Experience

Option 1: Hold a current RCDD certification **OR**;

Option 2: Have a minimum of two years of approved and verifiable full-time equivalent work experience in data center design, construction and/or operations and hold a current BICSI TECH, RTPM or OSP certification or have a degree in architecture, engineering or construction management **OR**;

Option 3: Have a minimum of three years of approved and verifiable full-time equivalent work experience in data center design, construction and/or operations within the last seven years.

Suggested Study for Exam Applied for beginning 1 August 2019.

+ DC101: Introduction to Data Center Design (optional)
+ DC102: Applied Data Center Design and Best Practices (optional)
+ DCDC Online Test Preparation Course (optional)
+ ANSI/BICSI 002-2019, *Data Center Design and Implementation Best Practices*
+ *Essentials of Data Center Projects*
+ A minimum of 125 hours of independent study

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the credentialing exam.

+ Computer-based*
+ 100 questions
+ Exam reference publications are BICSI's ANSI/BICSI 002-2019 standard and *Essentials of Data Center Projects*
+ Closed-book, multiple-choice, multiple-response and drag & drop items
+ Two-hour timed exam

*Visit pearsonvue.com/bicsi for a testing location near you.

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at **bicsi.org/dcdc** (click on "Get Started"). See the exam handbook at **bicsi.org/dcdchandbook** for exam details. The exam fee is not included in the course fee. **Note: Applications for the DCDC exam reflecting ANSI/BICSI 002-2019 are available 1 August 2019.**

Recertification Requirements

The DCDC certification is valid for three years.

DCDC credential holders are required to continue their education in order to recertify their credential. Within a three-year period (after the exam is passed), these credential holders must:

+ Earn a minimum of 36 BICSI-recognized CECs.
+ Submit proof of CECs, recertification application and recertification fee by the expiration date.

bicsi.org/dcdc

U.S. MILITARY AND RESERVISTS: BICSI certification exams are eligible for GI Bill reimbursement **(bicsi.org/gibill)** and may also be eligible for the Credentialing Opportunities On-Line (COOL) Program **(bicsi.org/cool)**.

THREE POWERFUL
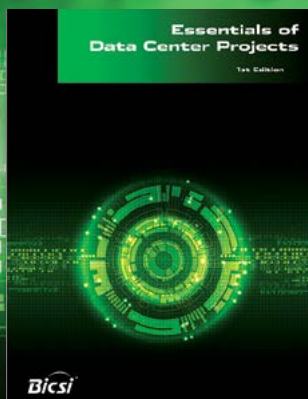# DATA CENTER PUBLICATIONS

bicsi.org/dcdc
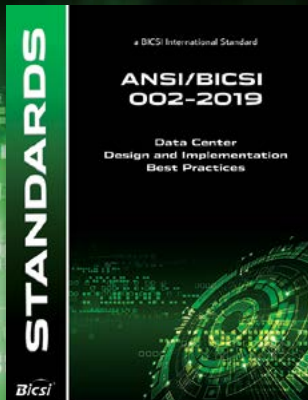
ANSI/BICSI 002-2019, *Data Center Design and Implementation Best Practices*

BICSI 009-2019, *Data Center Operations and Maintenance Best Practices*

Essentials of Data Center Projects, **1st Edition**

ANSI/BICSI 002-2019
Data Center Design and Implementation Best Practices

On the edge, in the cloud, ANSI/BICSI 002-2019 does them all. ANSI/BICSI 002-2019, BICSI's international best-seller, covers all major systems found within a data center. Written by industry professionals from a variety of disciplines, this standard not only lists what a data center requires, but also provides ample recommendations on the best methods of implementing a design to fulfill your specific needs.

While the traditional data center continues to be the focus, the breadth of content can also be applied to modular, containerized, edge and hyperscale data centers.

The DCDC exam covers content, in part, from BICSI 002.

Highlights

As the foundation standard for data center design, BICSI's 002 covers the following and more:

+ Design methodology
+ Site selection and space planning
+ Structural and architectural
+ Electrical systems
+ Mechanical systems
+ Security and fire
+ Facility and building systems

+ Telecommunications infrastructure
+ Network infrastructure
+ Data center commissioning & maintenance
+ Energy efficiency
+ Multi-site data center architecture
+ Colocation planning
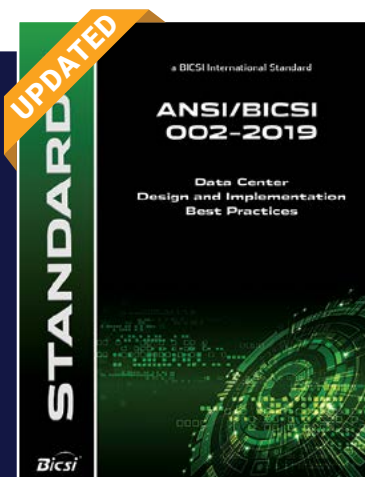
Who Should Purchase?

+ A&E and construction firms involved with data centers

+ DCDC exam applicants

+ Data center owners and operators

+ Professionals within facilities and physical security management

+ Project managers and installers

+ Telecommunications and information technology (IT) consultants

+ Students taking BICSI courses*

*ANSI/BICSI 002-2019 must be purchased for DC102 and the DCDC Online Test Preparation courses. Prior to December 2019, the DCDC Online Test Preparation course will reference ANSI/BICSI 002-2014.

bicsi.org/002

BICSI 009-2019
Data Center Operations and Maintenance Best Practices

Operations can make or break even the best data center design. Data centers come in all sizes and serve a variety of users, applications and services. While the design of data centers can mitigate many risks to uptime, even the best design can be foiled by lax or inadequate care in operations.

Introducing BICSI 009-2019, the first open-consensus standard providing more than a framework for data center operation policies and practices. Developed by a global volunteer base, the material within reflects operational experience and lessons from a wide variety of data center owners, operators, designers and consultants covering data centers from the small enterprise to the large hyperscale colocation data center and everything in-between.

Highlights

As the foundation standard for data center operations, BICSI 009 features 10 chapters covering the following and more:

+ Governance
+ Standard operating procedures
+ Security

+ Maintenance
+ Emergency operating procedures
+ Management

Who Should Purchase?

+ Data center owners and operators

+ Professionals involved with data center design, upgrades, retrofits and operations

+ Facilities management

+ Data center consultants and service providers

bicsi.org/009

Essentials of Data Center Projects

A data center is more than a room with several servers; it is a complex facility with interdependencies on multiple disciplines, systems and equipment. As the complexity of a data center continues to increase, so does the project that enables its construction.

Based on years of experience by data center professionals, the *Essentials of Data Center Projects (EDCP)* contains a holistic view of the overall data center project, from conceptualization to planning, implementation and project closeout. With more than 200 pages of content, the *EDCP* provides the underlying knowledge necessary for data centers great and small.

The BICSI Data Center Design Consultant (DCDC) exam is based in part on content from the *EDCP.*

Who Should Purchase?

+ Data center designers
+ Professionals involved with data center design, upgrades, retrofits and operations + Data center facilities and construction management + Data center consultants and service providers + Data center owners and operators

bicsi.org/edcp

OSP

Outside Plant™ Designer
Trusted OSP Technology and Design

bicsi.org/osp

Since the advent of electrical telegraphy in the early 19th century, outside plant (OSP™) has been the foundation of connecting the world. As with all foundations, OSP systems are only as good as the people behind their design, construction and verification.

BICSI OSP Designers are found in all facets of OSP design and construction, utilizing their proven knowledge and skills on projects of all sizes and applications. These include multi-building campuses, airports and railroad terminals—and connecting smart city systems and people everywhere to cellular networks, cloud services and edge computing systems near and far.

Recognized globally, those who have earned the title of OSP Designer have shown both their experience within the creation, planning, integration, execution or detail-oriented management of OSP projects, as well as the breadth and depth of knowledge applicable to the position as identified by their peers in the field.

Areas of Knowledge

+ Project development
    - Defining parameters
    - Route planning
    - Site surveying
    - Bid development
+ Pathways and infrastructure
    - Underground structures
    - Direct-buried cabling
    - Aerial platform and spaces
    - Grounding (earthing) systems
    - Utility clearances and separations
    - Selection of cabling media
+ Design preparation
    - Preliminary design review
    - Construction package creation
    - Defining rough order of magnitude
    - Project timeline and milestones
+ Project implementation
    - Quality control
    - Change management
    - Testing and reporting
    - Final verification and approval

OSP COURSES + *OSPDRM* + **OSP EXAM** = **OSP DESIGNER CERTIFICATION**
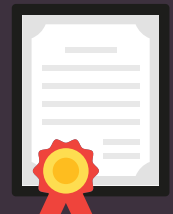
OSP101: Introduction to Outside Plant Design

Participate in interactive scenario-based online learning in this introductory course. Learn about outside plant (OSP) design considerations for route selection, underground and direct-buried pathways and aerial support structures for an identified aerial pathway. In addition, the course explores industry-recognized cables for cabling systems, using codes and standards, and right-of-way requirements.

Course Objectives

+ List basic types of OSP pathways and spaces
+ List types of cable based on media construction for an application
+ Describe various cabling topologies
+ Identify general requirements of bonding and grounding (earthing) and electrical protection for outside plant
+ Determine specifications for underground pathways and spaces
+ Explain types of trenching methods
+ Identify considerations for aerial support structures
+ Identify requirements for acquiring public or private right-of-way

End of Course Assessment

The OSP101 course includes a timed comprehensive assessment, consisting of 30 questions to be completed within 45 minutes. Students may take the assessment as many times as needed to master the content. A score of 75 percent or higher must be achieved to satisfy course completion and earn 6 CECs.

About This Course

+ BICSI CONNECT online course*
+ 90 days to complete course
+ 6 CECs

Who Should Attend?

+ Individuals needing introductory knowledge of OSP design
+ ICT professionals with interest in OSP design

bicsi.org/osp101

RECOMMENDED SYSTEM REQUIREMENTS

See page 12.

*All BICSI CONNECT courses require a computer, and are nonrefundable and nontransferable.

Bicsi®
OSP DESIGNER

OSP102: Applied Outside Plant Design

Gain application-based knowledge of all aspects of the outside plant (OSP) design process. This five-day course covers elements common to all OSP projects, along with design techniques for underground, direct-buried and aerial cable plant applications. Students have the opportunity to apply what they have learned through a series of design scenarios such as route design, media selection, planning and cost estimation.

Course Objectives

+ Identify the components of an OSP infrastructure
+ Identify OSP pathways and spaces
+ Describe effective route designs for outside plants
+ Describe media solutions
+ Describe planning requirements for initial OSP design
+ Identify the primary codes and standards associated with outside plant cable installation
+ Identify bonding and grounding requirements associated with OSP installation
+ Locate requirements in project documentation, including an RFQ, scope of work and other information typically established during a site and/or field survey
+ Identify underground, direct-buried and aerial pathways of a route
+ Describe the three primary cabling topologies and hybrid topologies
+ Identify special design considerations
+ Identify the minimum components of a maintenance plan
+ Identify the information that is needed to provide a cost estimate

End of Course Assessment

Students work together throughout the course to complete a group project, allowing immediate use of new knowledge and skills learned in the classroom.

Prerequisites & Preparation

OSP101 and completion of the ICT Design Fundamentals Program is recommended prior to attending this class. BICSI also strongly recommends that students read the *OSPDRM*, 6th edition, and any errata.

About This Course

+ 5-day course
+ 35 CECs

Who Should Attend?

+ Individuals who want to make OSP engineering or design their profession
+ Individuals charged with the maintenance of OSP facilities
+ OSP designers looking for a refresher or wanting to learn new techniques
+ Individuals involved in the construction of an OSP system
+ Individuals planning to sit for the OSP Designer exam

What's Great About This

OSP102 is a hands-on course, providing an engaging and active learning experience by using real-world scenarios to design underground, direct-buried and aerial plants.

bicsi.org/osp102

REQUIRED MATERIALS

+ Outside Plant Design Reference Manual (OSPDRM)**, 6th edition, digital or hardcopy****
+ Internet-capable device

Not included in course fee; order at **bicsi.org/ospdrm

OSP Designer Certification Exam

Experience

Option 1: Hold a current RCDD® certification **OR**;

Option 2: Have two years of verifiable full-time equivalent field experience in OSP design and/or installation and a minimum of 32 hours of documented continuing education in OSP design and/or installation which may include training provided by BICSI, manufacturer training, college courses, industry training and/or vendor training.

Suggested Study

+ OSP101: Introduction to Outside Plant Design (optional)
+ OSP102: Applied Outside Plant Design (optional)
+ *Outside Plant Design Reference Manual (OSPDRM)*
+ A minimum of 100 hours of independent study

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the credentialing exam.

+ Computer-based*
+ 100 questions
+ Exam reference publication is BICSI's *OSPDRM*
+ Closed-book, multiple-choice with one correct answer and multisection, multiple-choice questions with two correct answers
+ Two-hour timed exam

*Visit **pearsonvue.com/bicsi** for a testing location near you.

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at **bicsi.org/osp** (click on "Get Started"). See the exam handbook at **bicsi.org/osphandbook** for exam details. The exam fee is not included in the course fee.

U.S. MILITARY AND RESERVISTS: BICSI certification exams are eligible for GI Bill reimbursement **(bicsi.org/gibill)** and may also be eligible for the Credentialing Opportunities On-Line (COOL) Program **(bicsi.org/**

Recertification Requirements

The OSP Designer certification is valid for three years.

OSP credential holders are required to continue their education in order to recertify their OSP credential. Within a three-year period (after the exam is passed), OSP credential holders must:

+ Earn a minimum of 24 BICSI-recognized CECs.
+ Submit proof of CECs, recertification application and recertification fee by the expiration date.

bicsi.org/osp

"Earning the OSP credential was a really big step forward in my career. BICSI laid out great study material and everyday useful information that I use each week— from codes and standards, to very helpful management ideas for OSP infrastructure."

Jon Lowell, OSP, RTPM, Complete Network Solutions, Inc.,
Gainesville, Florida, USA

OSPDRM, 6th edition
Outside Plant Design Reference Manual

Outside plant (OSP) cabling and infrastructure has evolved into the vital element that supports all voice and data communications globally. Even today's wireless networks are supported by a wide array of OSP cabling and infrastructure, empowering individuals to communicate as they need.

Written by industry experts, the *Outside Plant Design Reference Manual (OSPDRM)*, 6th edition, contains new and updated material on topics that include:

+ Passive optical networks (PON) as it relates to OSP
+ OSP aerial installation of all dielectric self-supporting cable (ADSS)
+ New storm loading requirements for aerial OSP design to include the U.S. Warm Islands Zone
+ Maintenance and restoration of outside plant
+ Radio frequency over glass (RFoG) specific to OSP fiber optical installations
+ Excavation methods for direct-buried cable and pathways
+ Project management as it concerns OSP design and geographic information systems (GIS)
+ Updated optical fiber cable types
+ Air-assisted cable installation
+ Joint-use/make-ready activities for OSP aerial plant
+ Clearances and grounding/bonding requirements

The *OSPDRM*, in conjunction with the OSP series courses, serves as a detailed study reference for the BICSI OSP Design exam.

Contents

+ Introduction to Outside Plant
+ Cable and Connector Types
+ Cabling Topologies
+ Pathways and Spaces
+ Splicing Hardware
+ Bonding and Grounding (Earthing) and Electrical Protection
+ Right-of-Way
+ Project Design
+ Maintenance and Restoration
+ Other Technologies
+ Appendix A: Codes, Standards, Regulations and Organizations
+ Appendix B: Legal Considerations
+ Appendix C: Cement and Concrete Applications
+ Appendix D: Balanced Twisted-Pair Cable Transmission Characteristics
+ Glossary
+ Bibliography
+ Index

Who Should Purchase?

+ Beginner and veteran designers
+ Consultants + End users
+ Engineers + OSP Design exam candidates + Students taking BICSI courses*

*The *OSPDRM* must be purchased for the OSP102 course.

ISBNs:
1-978886-76-1 (print)
1-978886-75-4 (digital)

bicsi.org/ospdrm

Winner of the 2017-2018 Award of Merit from the Washington, DC – Baltimore Society for Technical Communication (STC) Technical Communications Competition.

BICSI G1-17
ICT Outside Plant Construction and Installation: General Practices

As reliance on stable and efficient ICT networks has become critical for an ever-growing number of applications, the need for effective and efficient performance of outside plant (OSP) construction and installation has also increased. BICSI G1-17, *ICT Outside Plant Construction and Installation: General Practices*, serves as the first standard in a planned series focused on the construction and installation of ICT cabling infrastructure within OSP pathways and applications. BICSI G1 provides general information relevant to all OSP construction and pathways, with additional standards under development providing in-depth detail on the specific pathways and associated tasks.

Given the nature of development, this standard has been placed under continuous revision, so that as additional material is developed and approved, content within this standard can be modified to expand areas not present or remove conflicts if they arise.

Contents

+ Introduction
+ Scope
+ Required Standards and Documents
+ Definitions, Acronyms, Abbreviations and Units of Measurement
+ General Safety Considerations
+ Tools
+ Aerial OSP Installation
+ Bonding and Grounding
+ Right of Way
+ Drawings and Specifications (Construction Documents)
+ Appendix A: One Call Center Information (Informative)
+ Appendix B: Commonly Encountered AHJ Definitions (Informative)
+ Appendix C: Related Documents (Informative)
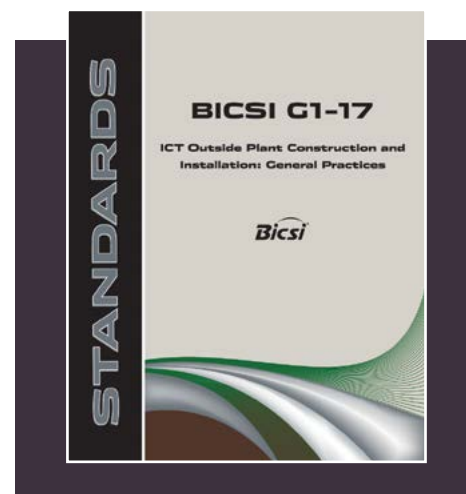
FREE
Digital Download!

Who Will Benefit?

+ OSP linemen and construction personnel

+ OSP designers

+ OSP construction and project managers

COMING SOON! BICSI G2, *ICT Outside Plant Construction and Installation: Aerial Cable Installation*

bicsi.org/g1

RTPM

bicsi.org/rtpm

Registered Telecommunications Project Manager™

Specialized, Successful ICT Project Management

The successful completion of any ICT project, whether in the office or out in the field, is heavily dependent upon how well the project is organized.

The Registered Telecommunications Project Manager (RTPM™) Program is a career path for individuals seeking an advanced understanding of ICT, personnel management and project management, and is frequently sought by design and installation professionals alike. ICT project managers, project coordinators, lead technicians, project team leaders and individuals seeking a profession in this rapidly growing field are encouraged to earn the RTPM credential.

A BICSI RTPM oversees and coordinates the interaction between designers, engineers, installers and technicians when new ICT projects are being developed or are undergoing construction. RTPM exam candidates are tested on their ability to understand and apply a vast collection of telecommunications project management principles, concepts, tools and technology.

The RTPM credential is achieved by passing a comprehensive exam based on the exam blueprint and developed using content from the *Telecommunications Project Management Manual (TPMM)*.

Areas of Knowledge

+ Specific project information gathering
+ Initial project budget estimate creation
+ Project proposal orchestration
+ Project deliverables
+ Administration
+ Project launch
+ Communication
+ Project closing

RTPM COURSES + *TPMM* + **RTPM EXAM** = **RTPM CERTIFICATION**
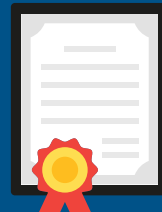
PM101: Introduction to Project Management

BICSI's PM101: Introduction to Project Management is an online, self-paced course and the first step for the ICT professional who is looking to transition into project management. This course provides a basic overview of the project management process from project selection to closeout, including information about risk management, quality control and procurement planning. It offers up-to-date principles and strategies that you can use to make your project teams successful.

Course Objectives

+ Identify the properties of a project, define the role of the project manager and list the project process stages.
+ List the stages of team development, name the four risk responses for threats and specify the four quadrants of a SWOT analysis.
+ Define the scope, schedule and cost baselines in the context of a project plan.
+ List the three classifications of communication methods, name the three triple constraints and specify the steps of reviewing a change request.
+ Apply scheduling tools and techniques to determine project performance.

About This Course

+ BICSI CONNECT online course*
+ 90 days to complete course
+ 6 CECs

Who Should Attend?

+ Anyone thinking about transitioning into a project management role
+ Architects
+ Consultants
+ Engineers
+ Facility professionals
+ IT professionals
+ Telecommunications professionals

bicsi.org/pm101

RECOMMENDED SYSTEM REQUIREMENTS

See page 12.

*All BICSI CONNECT courses require a computer, and are nonrefundable

BICSI RTPM

PM102: Applied Telecommunications Project Management

Project management is the foundation of any successful project. This course provides learners with the tools and templates to successfully manage an ICT project throughout the entire project lifecycle. It gives ICT professionals an opportunity to build on their existing project management skills while also exploring the steps and thought processes behind the basic principles and information necessary for managing a successful telecommunications project.

In BICSI's PM102: Applied Telecommunications Project Management course, you will not only learn how to manage projects from start to finish, you will also be better prepared to apply these management concepts and skills in real-world situations.

Course Highlights

+ Designing a project charter
+ Creating a project safety plan
+ Templates for managing project risk
+ Project scheduling
+ Project stakeholder identification
+ Cost management
+ EVM development
+ Develop a procurement plan
+ Change management tools
+ Conduct lessons learned
+ ICT project documentation
+ Build network diagrams
+ Leadership and team management

Prerequisites & Preparation

PM102 is designed for those who have a minimum of two years of experience in ICT and possess basic knowledge of project management concepts. If you do not meet the experience requirement, BICSI strongly recommends that you complete PM101 prior to enrolling in PM102.

About This Course

+ 5-day course
+ 35 CECs

Who Should Attend?

+ Candidates preparing to take the RTPM exam
+ Individuals seeking a career in project management
+ Existing project managers who wish to improve their understanding of structured project management and its application in the ICT industry
+ Installers seeking advancement to lead technician
+ Data center professionals managing ICT projects
+ Architects/engineers who manage ICT projects

bicsi.org/pm102

REQUIRED MATERIALS

+ Telecommunications Project Management Manual (TPMM), **1st edition***
+ Internet-capable device suggested for class

*Not included in course fee; order at **bicsi.org/tpmm**

PM103: Advanced Tools for ICT Project Management

Many companies expect their project managers and project leads to be able to use project management software and tools, such as Microsoft Project 2016, with little to no training. This course teaches key project management concepts, such as what a project is and what your role as a project manager will be. Then you will delve into techniques and strategies for managing a project's scope, schedule and budget. With this information in place, you will be ready to discover how Microsoft Project 2016 can be used to set up, manage, track and analyze your projects.

Course Objectives

+ Describe your role as a project manager
+ Define the project's scope and identify project team and stakeholders
+ Master the details of a project's schedule and budget
+ Set up a project in Microsoft Project 2016
+ Create a task-based schedule in Microsoft Project 2016
+ Track and analyze projects in Microsoft Project 2016

About This Course

+ BICSI CONNECT online course*
+ 90 days to complete course
+ 6 CECs

Who Will Benefit?

+ Technicians who want to transition into project management roles
+ Project managers
+ Project schedulers
+ Project leads

bicsi.org/pm103

RECOMMENDED SYSTEM REQUIREMENTS

See page 12.

*All BICSI CONNECT courses require a computer, and are nonrefundable

RTPM Certification Exam

Experience

You must have a minimum of two years of approved and verifiable experience in project management, such as planning, execution and closing of any project. The PM experience does not have to be directly related to telecommunications, but telecommunications experience is a plus. Experience must be within the last six years.

Suggested Study

+ PM102: Applied Telecommunications Project Management course (optional)
+ *Telecommunications Project Management Manual (TPMM)*
+ Minimum of 125 hours of independent study

The Examination

Registration for a course does not automatically register you for the exam. You must apply separately to sit for the credentialing exam.

+ Computer-based*
+ 100 questions that cover the bodies of knowledge for project management in the ICT industry
+ Closed-book and multiple-choice
+ Two-hour timed exam

*Visit pearsonvue.com/bicsi for a testing location near you.

Exam Application

Before taking the exam, you must be approved by BICSI. You may complete an online application at **bicsi.org/rtpm** (click on "Get Started"). See the exam handbook at **bicsi.org/rtpmhandbook** for exam details. The exam fee is not included in the course fee.

Recertification Requirements

+ The RTPM certification is valid for three years.
+ RTPMs are required to continue their education in order to recertify their RTPM credential. Within a three-year period, RTPMs must:
+ Earn a minimum of 36 BICSI-recognized CECs.
+ Submit proof of CECs, recertification application and recertification fee by the expiration date.

bicsi.org/rtpm

U.S. MILITARY AND RESERVISTS: BICSI certification exams are eligible for GI Bill reimbursement **(bicsi.org/gibill)** and may also be eligible for the Credentialing Opportunities On-Line (COOL) Program **(bicsi.org/cool)**.

"The BICSI RTPM credential is a great way to announce that you understand project management as it relates to the information and communications technology industry. After obtaining my RTPM, I secured a job at one of the nation's leading multisite, multiservice, multitechnology rollout companies."

Adam Runyan, RTPM, Concert Technologies, Ranson, West Virginia, USA

TPMM, 1st edition
Telecommunications Project Management Manual

In the far-reaching world of project management, the *Telecommunications Project Management Manual (TPMM)*, 1st edition, zeros in on the key information needed to execute successful telecommunications projects. Written by some of the very best telecommunications project managers in the information and communications technology (ICT) industry, the manual provides a unique reference for project management information that is applicable to a telecommunications project. The *TPMM* not only enhances BICSI's RCDD, OSP, DCDC and Technician credential holders' careers, but also others in the ICT industry who wish to successfully manage complex telecommunications projects.

The *TPMM*, in conjunction with the PM series of courses, serves as a detailed study reference for the BICSI RTPM exam.

Contents
The *TPMM* consists of four chapters and two appendices, as well as a glossary complete with definitions, acronyms and industry symbols. Topics include:

+ Design Project Management
+ Installation Project Management
+ Project Implementation
+ Outside Plant Project Management
+ Project Documentation
+ Business Development
+ Legal Considerations

Who Should Purchase?

+ Telecommunications
  project managers

+ Project coordinators

+ Lead technicians

+ Project team leaders

+ Students taking BICSI PM courses*

+ RTPM exam candidates

+ Individuals seeking a new career
path in this rapidly growing field

*The *TPMM* must be purchased
for the PM102 course.

ISBNs:
1-928886-67-1 (print)
1-928886-68-X (digital)

bicsi.org/tpmm

Specialized Knowledge and Resources

BICSI offers additional training and resources valuable throughout the ICT industry.

BG101: Foundations of Telecommunications Bonding and Grounding

BICSI's BG101: Foundations of Telecommunications Bonding and Grounding is an online, self-paced course. The course covers foundational knowledge of telecommunications bonding and grounding (earthing) concepts and methods. BG101 consists of seven modules that include engaging interactions and knowledge checks.

Course Highlights

The objective of BG101 is to verify that the bonding and grounding design solutions for telecommunications infrastructure for a commercial building, campus or data center comply with best practices documented in BICSI publications.

By the end of this course you will be able to:

+ Define basic electrical principles
+ Determine the potential hazards for a given scenario
+ Describe the role of the bonding and grounding components to eliminate hazards
+ Verify the design of telecommunications bonding infrastructure for a facility
+ Determine the specifications for a bonding and grounding infrastructure for a facility
+ Identify the best practices for lightning protection for a telecommunications infrastructure
+ Identify the installation and commissioning methods for bonding and grounding

Prerequisites & Preparation

It is recommended that students in this course have foundational knowledge of cabling media, structured cabling, principles of transmission and telecommunications pathways and spaces.

About This Course

+ BICSI CONNECT online course*
+ 90 days to complete course
+ 6 CECs

Who Will Benefit?

The course is developed for ICT design professionals including:

+ RCDDs
+ Project managers
+ Installation technicians
+ Engineers
+ Data center designers
+ OSP professionals

bicsi.org/bg101

END OF COURSE ASSESSMENT

The BG101 course includes a comprehensive end of course assessment. The assessment contains 25 questions and you will be given one hour to complete and submit your answers. You will be able to take the assessment as many times as you need to master the content. A score of 75 percent or higher must be achieved to satisfy course completion and earn CECs.

RECOMMENDED SYSTEM REQUIREMENTS

See page12.

*All BICSI CONNECT courses require a computer, and are nonrefundable

BG102: Best Practices for Telecommunications Bonding and Grounding

BG102 is an intensive three-day course that provides learners with hands-on best practices for bonding and grounding commercial buildings and campuses as outlined in BICSI publications *(TDMM, OSPDRM, ITSIMM)* and TIA-607-C. This course is one component of BICSI's telecommunications bonding and grounding curriculum, which is designed as part of an overall career.

About This Course

+ 3-day course
+ 21 CECs

Course Highlights

The main objective of the course is to design the bonding and grounding design solution for a given facility.

+ Determine the types of bonding and grounding systems required for a campus
+ Design the bonding and grounding components for the facility (building/campus), given an infrastructure type
+ Design the bonding and grounding for the telecommunications structure in a building or facility
+ Design the bonding infrastructure for a data center in a building or facility
+ Design the bonding infrastructure for the DAS in a building or facility
+ Identify the steps for testing the bonding and grounding connections

Prerequisites & Preparation

BICSI recommends taking BG101 before taking BG102. Otherwise, students should have equivalent knowledge, including foundational knowledge of cabling media, structured cabling, principles of transmission, and telecommunications pathways and spaces.

Who Should Attend?

The course is developed for ICT design professionals including:

+ RCDDs
+ Project managers
+ Installation technicians
+ Engineers
+ Data center designers
+ OSP professionals

Course Assessment

There will be an online self-assessment on the first and last day of the class. The scores will not be used to pass or fail the students. The purpose of the assessments is to provide students with a tool to measure their knowledge at the beginning and end of the class.

bicsi.org/bg102

What's Great About This Course?

Through real-world design challenges and scenarios, students will be able to apply their new skills and knowledge to ICT and telco systems in virtually all building types and functions.

COURSE MATERIALS

+ Access to the ANSI/TIA-607-C, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises standard is strongly suggested for reference during class

ICT Design Fundamentals Program

bicsi.org/fundamentals

Fundamental ICT Knowledge Through BICSI CONNECT

Learn the fundamental principles that determine how ICT systems are designed and installed—from cabling to project management.

These series of five online courses are ideal for those starting out in the industry, as well as those looking for a refresher of the fundamentals.

NEW & IMPROVED PROGRAM

Revisions include:

+ Updated modules, with storytelling elements and cinematic approach.
+ High level of interactivity, realistic elements and visual enhancements.
+ Immediate and substantial learner feedback.
+ Expansion of data center and network design topics.
+ Current structured cabling system codes, standards and best practices.
+ Information on emerging and trending technologies, such as PoE, Cat 8, intelligent buildings and outside plant.

BUNDLE AND SAVE

Save money by purchasing these courses and exam as a bundle. You will have six months for completion of all courses and the exam. CECs are not offered for the Fundamentals bundle.

Beneficial for long-term ICT career advancement and a great way for installers and technicians to transition into design.

ICT Design Fundamentals Program

BICSI recommends that students complete all five online* courses before sitting for the ICT Design Fundamentals exam. Upon passing, students are better prepared to continue their design career.

Courses Include:

Note: Courses are listed in the order of recommended completion. Individually purchased courses must be completed within 90 days of purchase.

+ Fundamentals of Structured Cabling Systems
Follow along as an ICT design firm attempts to meet the telecommunications requirements of three demanding clients. Learn what a structured cabling system is and how its components work together to provide predictable performance while supporting moves, adds and changes (MACs), and future growth.

+ Fundamentals of Telecommunications Media
This course explores the transmission of information over various forms of telecommunications media, including balanced twisted-pair, coaxial and optical fiber cabling. It focuses on the common characteristics of those mediums and how their construction affects transmission. The course also explains how various installation methods will affect transmission.

+ Fundamentals of Bonding and Grounding
Bonding and grounding (earthing) are an integral portion of the telecommunications infrastructure for providing a safe electrical operating environment. They are also instrumental in providing a reliable reference for the operation of electronic equipment. This course covers basic electrical theory, and grounding and bonding system configurations and components.

+ Fundamentals of Network Design
It's essential for ICT professionals to know how a network is built and how to meet the end users' needs. In this course, learn how a network's design can affect accessibility and reliability for the end user, review the network requirements in a data center, and understand the design considerations for a wireless network.

+ Fundamentals of Project Management
Project management is required to manage and control projects with teams and is a unique career path for the ICT design professional. This course reviews the common tools and techniques used to ensure successful project completion.

Who Will Benefit?

+ Those new to the ICT industry or who want to refresh their knowledge
+ Those preparing to take the ICT Fundamentals exam
+ Installers and technicians looking to transition their career into design

What's Great About This

Both the industry novice and the experienced professional will appreciate the high level of interactivity and storytelling elements of this ICT overview.

bicsi.org/fundamentals

RECOMMENDED SYSTEM REQUIREMENTS

See page 12.

*All BICSI CONNECT courses require a computer, and are nonrefundable and nontransferable.

Essentials of Bonding and Grounding

The bonding of the information and communications technology (ICT) infrastructure to a building's grounding system is an important element of safeguarding personnel, property and equipment from unexpected electrical voltages and currents. The *Essentials of Bonding and Grounding* provides the common foundational knowledge needed for all aspects of bonding the ICT infrastructure, paving the way for designers, technicians and installers to design and implement a successful bonding infrastructure. This digital reference offers a compact and easy-to-understand look at basic bonding and grounding techniques.

Who Should Purchase?

Those who require the foundational knowledge for the proper execution of future and more complex bonding and grounding tasks, including:

+ RCDDs + Designers of low-voltage cabling systems
+ Those involved in the basic design of bonding and grounding systems

ISBN: 978-1-928886-72-3
(digital)

bicsi.org/ebg

BICSI's Special ICT Installation Considerations

BICSI's Special ICT Installation Considerations (SIC) compiles information on many of the less common building systems, such as paging, sound masking and fire detection. Additionally, as the number of racks required for equipment has increased, especially within data centers and other mission-critical facilities, further material on installing equipment cabinets and racks has been provided. This electronic publication is rounded out by the inclusion of additional material for working within health care facilities, as well as extending circuit lengths for some building systems.

Who Should Purchase?

+ Installers and technicians for low-voltage cabling
+ Those who may encounter specialized installation methods

ISBN: 978-1-928886-73-0
(digital)

bicsi.org/sic

BICSI's ICT Terminology Handbook
Free to BICSI members and nonmembers

Following in the footsteps of the classic *BICSI Information Transport Systems Dictionary*, *BICSI's ICT Terminology Handbook* download is an essential tool for all information and communications technology (ICT) professionals. This compendium of terms, definitions, acronyms, symbols and more is relevant for anyone seeking a BICSI credential AND for those needing an on-the-job reference.

BICSI's ICT Terminology Handbook is a global product created by a team of seasoned ICT subject matter experts. Starting from a base of content used in BICSI's technical publications, the team expanded the scope to include material from the entire ICT industry. The end result is more than 300 pages of relevant and useful information sure to increase ICT professionals' skillsets.

To download this free publication, visit bicsi.org/terminology.

Who Should Use?

+ Architects   + Engineers
+ Consultants   + ICT professionals
+ Designers

**FREE
Digital Download!**

ISBN: 1-928886-68-X (digital)

bicsi.org/terminology

BICSI's Special ICT Design Considerations

Many of BICSI's credential holders, from RCDDs to RTPMs, will eventually encounter information and communications technology (ICT) designs that fall outside of the norm. *BICSI's Special ICT Design Considerations* download addresses the special designs that ICT designers are likely to encounter. Taken from the pages of BICSI's flagship *Telecommunications Distribution Methods Manual (TDMM)*, this information is now in one convenient place.

Who Should Purchase?

+ Architects
+ Consultants
+ Designers
+ Engineers
+ ICT professionals
+ Telecommunications professionals

ISBN: 1-928886-69-8 (digital)

bicsi.org/considerations

ANSI/BICSI 007-2017

Information Communication Technology Design and Implementation Practices for Intelligent Buildings and Premises

The Internet of Things (IoT) has ushered in the year of the interconnected building, premise and city. Driven by the need for environments which are safer, more comfortable, productive or efficient for the people within, ICT has become the means to interconnect building systems of all sizes and applications. With ICT as the common thread, an effective and efficient structured cabling system is critical to the success of both initial implementation and future growth to meeting the building and occupant needs.

ANSI/BICSI 007 provides requirements and recommendations for design and implementation of the structured cabling system and related applications for any size building or premise, regardless if it serves commercial, government, transportation, residential or any other function. BICSI 007 also includes information for building automation systems, low-voltage lighting, combined data and power transmission (e.g., PoE, PoH, 4-pair Power), and a number of other systems routinely found inside intelligent building application.
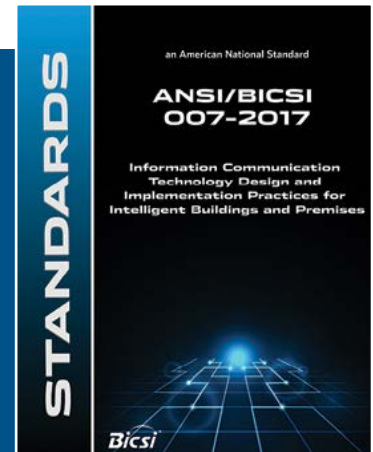
Who Should Purchase?

+ Architects + Engineers
+ Facilities and building managers
+ ICT system designers
+ Project managers

bicsi.org/007

ANSI/BICSI 005-2016

Electronic Safety and Security (ESS) System Design and Implementation Best Practices

Gone are the days of the stand-alone safety or security systems. Today's individual systems are being integrated with each other and a myriad of other building systems and functions to provide an effective, efficient and comprehensive solution for protecting people, assets and property. However, solutions are only able to perform to the level of their weakest link, sometimes that being the cabling infrastructure supporting these systems.

ANSI/BICSI 005 provides the security professional with the requirements and recommendations of a structured cabling infrastructure needed to support today's security systems, while providing the cabling design professional information on different elements within safety and security systems that affect the cabling infrastructure design. While content is provided for the primary areas of security, such as access control, intrusion detection and video surveillance, the requirements, recommendations and information contained within apply equally across a wide range of systems that comprise the security and fire-life-safety spectrum.
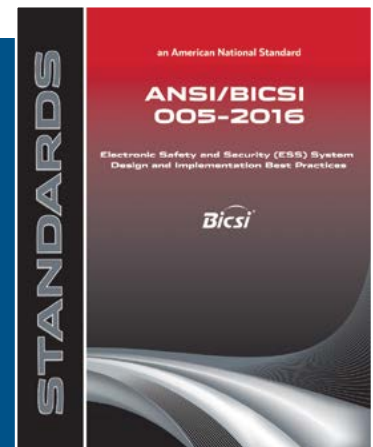
Who Should Purchase?

+ ICT designers working with ESS systems + Project managers and systems inspectors requiring knowledge of IP-enabled security systems + Security system designers of IP-enabled systems + Security system integrators and consultants + Site security and facility personnel

bicsi.org/005

ANSI/BICSI 008-2018

Wireless Local Area Network (WLAN) System Design and Implementation Best Practices

Growth in the WLAN market is stronger than ever as it continues to enable new digital and business strategies and outcomes. With the development of the 802.11ax/Wi-Fi 6 protocol, WLAN systems are poised to deliver similar networking speeds commonly available through wired cabling. And as wireless technology has also become an enabler for the rapid growth of the number of IoT and building intelligence devices, designing an effective ICT cabling infrastructure for today and tomorrow's WLAN systems is no longer as simple as moving a cable to a single access point.

ANSI/BICSI 008 provides the requirements and recommendations for design and implementation of the structured cabling system supporting a WLAN. In addition, information is provided to assist the ICT designer in understanding concepts within wireless transmission for developing WLAN deployments. The information within BICSI 008 will also be of use to dedicated WLAN designers when planning locations for access points and how placement can be supported by the cabling infrastructure.
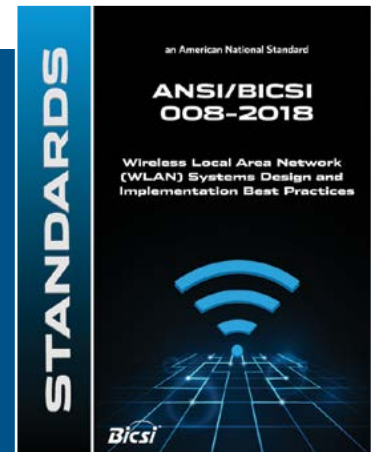
Who Should Purchase?

+ All professionals who use WLANs in conjunction with network and building systems + ICT system designers and implementers + Architects + Facilities and building managers + Project managers

bicsi.org/008

¡En Español También! bicsi.org/español

ANSI/BICSI 006-2015

Distributed Antenna System (DAS) Design and Implementation Best Practices

As wireless connectivity has become a necessity in today's ever-changing and mobile populace, solutions such as DAS are no longer seen as just a recommended site upgrade. Services and applications, such as cellular communication, broadband and land mobile radio, and emergency response are all affected by the capacity, reliability and design of the DAS. As more devices connect to the greater world, DASs are becoming an indispensable element of a greater connectivity solution.

ANSI/BICSI 006 is the first standard specifically written for the design and implementation of a DAS. Created to be applicable to all DASs, regardless of manufacturer, service provider or application, BICSI 006 provides ICT and connectivity designers and installers with not only information about the types and components commonly used, but also with the requirements and best practices of the design, installation and implementation of a DAS.

Who Should Purchase?

+ All professionals that use DAS in conjunction with ICT + Architects + Engineers + Facilities and building managers + ICT system designers + Project managers

bicsi.org/006

ANSI/BICSI 003-2014

Building Information Modeling (BIM) Practices for Information Technology Systems

The request and adoption of building information modeling (BIM) for information and communications technology (ICT) projects has been steadily increasing in recent years. Architectural, engineering and construction firms all differ in what they require and ultimately provide their client. When combined with the varying levels of information provided by manufacturers that support all aspects of the construction industry, the result can be inefficiencies, frustration and a failure to meet project expectations.

ANSI/BICSI 003 is the first BIM standard written specifically for ICT. At its core, the standard provides detailed information about BIM content models and object parameters, setting the recommended levels and guidelines for BIM models. Also contained are considerations about the integration of BIM within projects, as well as identifying items within ICT systems that often enter into spatial conflicts with other areas of construction (e.g., electrical, mechanical).

STANDARDS

an American National Standard

ANSI/BICSI 003-2014

Building Information Modeling (BIM) Practices for Information Technology Systems

Bicsi

Who Should Purchase?

+ Architects + Engineers
+ Facilities and building managers
+ Facility owners and operators
+ ICT system designers + Project managers + Telecommunications and Information Technology (IT) consultants and installers

bicsi.org/003

ATTENTION MILITARY SERVICE MEMBERS AND RESERV-

Equip Yourself for the Civilian Workforce

Earn BICSI credentials to increase your professional skillset and competitiveness in the civilian sector.

Credentialing Opportunities On-Line (COOL) will pay for your BICSI Certification Exams!

Prepare yourself. bicsi.org/cool

G.I. Bill Reimbursement also available! bicsi.org/gibill

Bicsi®

ANSI/BICSI 004-2018

Information Communications Technology (ICT) Systems Design and Implementation Best Practices for Healthcare Institutions and Facilities

Today's healthcare facility is increasingly digitized, from health records, and diagnostic and monitoring equipment, to remotely routing office visits spanning thousands of miles. As more systems connect to the network, any ICT infrastructure deployed is not only required to meet today's needs, but those of tomorrow—with minimal to no effect on the overall healthcare mission.

ANSI/BICSI 004 provides requirements and recommendations for best practices for the design and implementation of information technology systems infrastructure for healthcare institutions and facilities for meeting today and tomorrow's needs.

Some of the areas in which the 2018 standard has been revised and expanded include:

+ Communication, ICT and wireless information
+ Architectural aspects of healthcare facilities
+ Emergency medical services radio, sound and acoustical systems
+ Network design and security
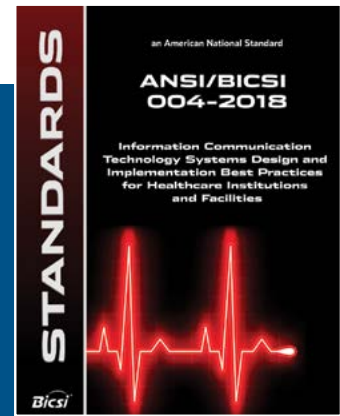
Who Should Purchase?

Healthcare facility professionals who:
+ Design and implement ICT and IP-enabled systems
+ Inspect or require knowledge of ICT and IP-enabled systems
+ Manage or maintain ICT and IP-enabled systems + Manage ICT infrastructure projects

bicsi.org/004

ANSI/BICSI 001-2017

Information and Communication Technology Systems Design and Implementation Best Practices for Educational Institutions and Facilities

Today's educational facilities are rarely one building. That means not only does the ICT infrastructure need to meet the varying demands of a specific building, but multiple buildings must all be integrated into one cohesive design. And in today's environment of providing multifunctional spaces, it is not uncommon to find a combination of commercial, industrial, data center, health care and entertainment environments within just a few buildings.

ANSI/BICSI 001 is written for today's educational spaces, where network connectivity is no longer considered "nice to have," but rather a "must have," just like electricity. In addition to providing guidance in the selection and implementation of the ICT infrastructure, more information has been added to address commonly encountered technologies and applications found within the classroom, the building and the campus on which it resides.
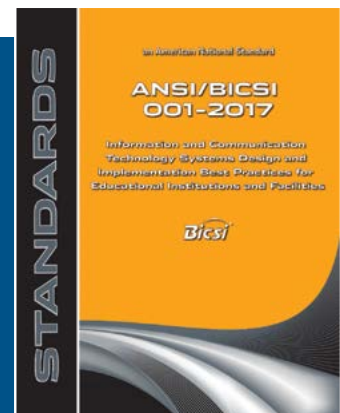
Who Should Purchase?

+ Architects + Engineers
+ Facility and building managers
+ Facility owners and operators
+ ICT system designers + Project managers + Telecommunications and IT consultants and installers

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All BICSI technical manuals and the entire collection of BICSI standards are available in one convenient package.

This collection is ideal for anyone starting their ICT library, or those looking to update their existing BICSI publications.

Content throughout the 5,000-plus page collection is extensive, ranging from the fundamentals of ICT to cabling design to specialized applications. It also costs less than purchasing and shipping each of the publications individually.

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THE BICSI LIBRARY INCLUDES:

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+ *Telecommunications Distribution Methods Manual (TDMM)*
+ *Outside Plant Design Reference Manual (OSPDRM)*
+ *Information Technology Systems Installation Methods Manual (ITSIMM)*
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+ ANSI/BICSI 001-2017
+ **NEW!** ANSI/BICSI 002-2019
+ ANSI/BICSI 003-2014
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+ ANSI/BICSI 008-2018
+ **NEW!** BICSI 009-2019
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Information and communications technology (ICT) plays a significant role in our daily lives in virtually every part of the world. So providing the education and resources to make sure we continue to build this knowledge is important to BICSI, both locally and globally. **bicsi.org/ global**

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As our association continues to grow, BICSI adds more global events to its list of activities. A valuable way to make new industry connections, these occasions allow you to learn about industry issues that directly affect your part of the world. bicsi.org/conferences

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BICSI Authorized Training Providers are organizations that offer BICSI-certified training from their own facilities located in areas around the globe. They use the same quality curriculum, classroom equipment and materials offered in any BICSI-conducted class. See page 12 for details.

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+ Authorized Training Facilities (ATFs) are approved to offer BICSI's Cabling Installation Program. bicsi.org/atf

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Learn about the newest industry trends and earn CECs without leaving your home or office. We offer BICSI CONNECT online courses, as well as webinars and virtual instructor-led training. We can even bring our Corporate On-site Training to you. See pages 10-13 for details. bicsi.org/training
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ELECTRONIC TESTING

BICSI credentialing exams are administered in a computer-based testing (CBT) format at Pearson VUE Authorized Testing Centers around the world.* Find a testing site near you. pearsonvue.com/bicsi

*Installation hands-on exams must be successfully completed before the written electronic exam can be attempted at a Pearson VUE testing location.

Course Registration Details bicsi.org/courses

BICSI members pay less for BICSI courses.

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NOTE: Details below apply to instructor-led courses only.

BICSI Cancellations: Occasionally BICSI may have to cancel a class. If this happens, all class attendees will be notified by email. Attendees will have the option of moving to a future class at a different location or receiving a full refund of class registration fees.

BICSI recommends that students do not make nonrefundable travel plans until 30 days prior to the scheduled start date.

BICSI will attempt to make all class cancellation/rescheduling decisions no later than 30 days prior to the scheduled start date of the class. If a class is cancelled by BICSI within 30 days of the scheduled start date, BICSI will reimburse the student for any change fees (hotel and airfare) resulting from the need to reschedule travel arrangements. Proof of incurred expenses must be provided to receive the reimbursement.

If BICSI cancels a class more than 30 days prior to the scheduled start date, BICSI is unable to provide refunds or cover any expenses relating to travel, including but not limited to hotel and airfare.

If you have any questions about your class, please contact BICSI at 800.242.7405 (USA and Canada toll-free) or +1 813.979.1991 or email bicsi@bicsi.org.

Student Cancellations: BICSI understands your busy schedule and knows that, from time to time, you may need to cancel and withdraw your attendance in a class. Class registration fees are refundable if a written cancellation request is received by BICSI no later than 11 business days prior to the first day of class. All subsequent cancellation requests will be subject to a cancellation fee of 25% of the class registration fee. Any cancellation request received within 11 business days prior to the first day of class will be subject to a late cancellation fee of 25% of the class registration fee.

Cancellation requests must be submitted in writing by email to bicsi@bicsi.org or by fax to +1 813.971.4311.

Transfers: BICSI will allow one transfer without penalty if a written request is received no later than 11 business days prior to the first day of class. All subsequent transfer requests received no later than 11 business days prior to the first day of class will be subject to a US$100 transfer fee. All transfer requests received within 11 business days prior to the first day of class will be subject to a transfer fee of US$250. Transfer requests must be submitted in writing by email to bicsi@bicsi.org or by fax to +1 813.971.4311.

No-Shows: Those who do not cancel before the first business day of class and do not show up for class are considered no-shows. A refund is not available for those who are considered no-shows. Additionally, continuing education credits (CECs) are not issued if the student is a no-show or does not complete the class. BICSI is unable to accommodate transfers to an alternate class or location for those considered no-shows.

Substitutions: Substitution requests must be received no later than 2 business days prior to the first day of class. Requests to substitute one student for another must be submitted in writing by email to bicsi@bicsi.org or by fax to +1 813.971.4311.

GSA: Those receiving GSA pricing should review the terms and conditions of the GSA Contract for cancellations.

Class Confirmations: Confirmation will be emailed to registered students. This will include the date and location of the training, required course materials and the edition number of the manual that will be used.

PROGRAM FEES AND PAYMENT INFORMATION

Full payment for BICSI courses must be received by BICSI prior to the start of class or session. Students who arrive to class without payment will be excused until course fees are paid in full.

Installation Program credential examinees must submit their exam application no less than 10 business days before the start of the installation class. Applications received after the deadline cannot be guaranteed an exam.

BICSI CONNECT

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Exam Registration Details bicsi.org/exams

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Exam Fees and Payment Information: BICSI accepts VISA, MasterCard, American Express, Diner's Club, Discover, checks (U.S. dollars, drawn on a U.S. bank), money orders, purchase orders (company P.O.s must be in excess of US$500) and wire transfers. Please contact BICSI's Accounting Department for instructions on wiring funds. Full payment for exam applications must be received by BICSI when you submit your exam application. All fees are nonrefundable.

Exam Confirmations: Confirmations will be emailed upon approval. Contact BICSI's Credentialing Department for details at 800.242.7405 (USA and Canada toll-free) or +1 813.979.1991.

Installation Program

Application Processing: A complete exam application and a nonrefundable application fee must be received by BICSI's Credentialing Department for review and processing no later than seven business days prior to the exam date. Exam applications will not be processed after that deadline. After the exam application is approved, it is valid for one year.

Exam Format: Exams are made up of two parts, hands-on and written. You must successfully pass both parts of the exam to earn a BICSI certificate or credential. Written exams are available via a computer-based testing format at a Pearson VUE Authorized Testing Center. The hands-on exams are conducted at the conclusion of the associated class.

Exam Reschedule and Cancellation Policy: You must contact Pearson VUE at pearsonvue.com/bicsi at least one business day prior to the scheduled appointment. Rescheduling or canceling less than one full business day prior to your appointment/exam may result in forfeiting your exam fees.

RCDD, RTPM, DCDC and OSP Programs

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Exam Format: The examinations are administered in a computer-based testing (CBT) format at Pearson VUE Authorized Testing Centers, worldwide. Locations of Pearson VUE Authorized Testing Centers can be found at pearsonvue.com/bicsi.

Exam Reschedule and Cancellation Policy: You must contact Pearson VUE at pearsonvue.com/bicsi at least one business day prior to your scheduled appointment. Rescheduling or canceling less than one full business day prior to your appointment may result in forfeiting your exam fees.

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Elite Plus Level: Eight Individual Memberships; ALL Alliance perks PLUS BOTH Marketing and Training modules; PLUS additional BICSI Connect courses; PLUS six BICSI webinar registrations

Complete a membership application at **bicsi.org/membership**.

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About BICSI

BICSI is a professional association supporting advancing the information and communications technology (ICT) community. ICT covers the spectrum of voice, data, electronic safety & security, project management and audio & video technologies. It encompasses the design, integration and installation of pathways, spaces, optical fiber- and copper-based distribution systems, wireless-based systems and infrastructure that supports the transportation of information and associated signaling between and among communications and information gathering devices.

BICSI provides information, education and knowledge assessment for individuals and companies in the ICT industry. BICSI serves more than 26,000 memberships and credentials. Our members are ICT Professionals that include designers, installers and technicians. These individuals provide the fundamental infrastructure for telecommunications, audio/video, life safety and automation systems. Through courses, conferences, publications and professional registration programs, BICSI staff and volunteers assist ICT professionals in delivering critical products and services, and offer opportunities for continual improvement and enhanced professional stature.

Headquartered in Tampa, Florida, USA, BICSI membership spans nearly 100 countries.

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Contract Information
SIN 132-50—Training courses for information technology equipment and software. (FPDS Code U012)
Contract Number: GS-35F-0253M
Period Covered by Contract: February 8, 2012-February 7, 2022
The full contract is available to view at bicsi.org/gsa
DUNS: 04-425-6352

SIN	Course Code	Course Description
132-50	DD102	Designing Telecommunications Distribution Systems
132-50	DC102	Applied Data Center Design and Best Practices
132-50	IN101	BICSI Installer 1 Training
132-50	IN225	BICSI Installer 2, Copper Training
132-50	IN250	BICSI Installer 2, Optical Fiber Training
132-50	TE350	BICSI Technician Training

To view a complete list of GSA course offerings, including a complete list of Open Market courses and pricing, visit bicsi.org/gsa.

Products and ordering information in this Authorized Federal Supply Service (FSS) Information Technology Schedule List are available on the GSA Advantage! System. Agencies can browse GSA Advantage! by accessing the FSS home page at gsa.gov. Under GSA guidelines, BICSI will accept government payments made using SmartPay credit cards that are authorized through major national banks. Please contact BICSI Membership and Customer Care at 800.242.7405 (USA and Canada toll-free) or +1 813.979.1991 with any questions you may have on both GSA pricing and ordering. You may also email bicsi@bicsi.org.

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