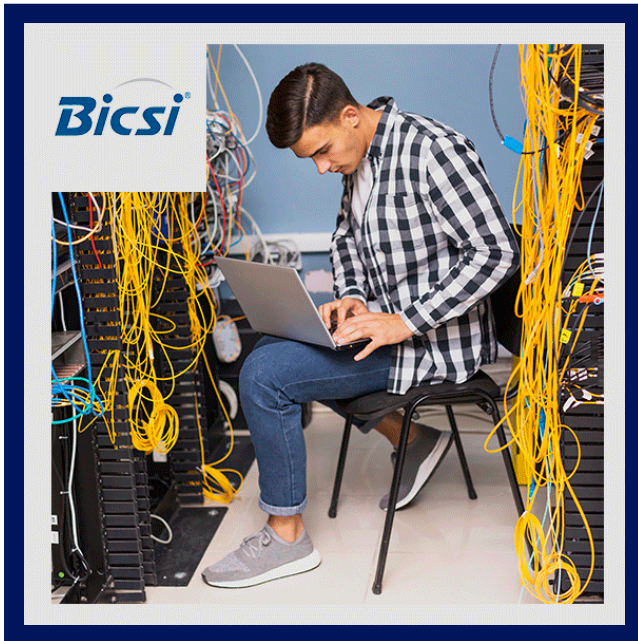


Infraestructura de Cableado para Redes Enterprise

Código: ICRE-001

Propuesta de Valor: BICSI

Duración: 80 Horas



Este curso está dirigido a Instaladores, diseñadores, consultores, ingenieros y usuarios finales responsables del diseño del sistema de la tecnología de información con al menos un año de experiencia laboral en cableado de redes de voz, datos, video, Incendio, control de acceso y otros sistemas de distribución de contenido en edificios que desean estar preparados para ejecutar su trabajo apegándose a normas y estándares internacionales de cableado y aplicando técnicas de última generación en este campo.



AUDIENCIA

Este curso está dirigido a Instaladores, diseñadores, consultores, ingenieros y usuarios finales responsables del diseño del sistema de la tecnología de información con al menos un año de experiencia laboral en cableado de redes de voz, datos, video, Incendio, control de acceso y otros sistemas de distribución de contenido en edificios que desean estar preparados para ejecutar su trabajo apegándose a normas y estándares internacionales de cableado y aplicando técnicas de última generación en este campo. Ideal para personas con estos perfiles:

- Ingenieros de: sistemas, informática, computación y redes.
- Ingenieros civiles, eléctricos y electrónicos.
- Empresas integradoras de cableado estructurado.
- Personas relacionadas con instalaciones de redes de cómputo y comunicaciones.



PRE REQUISITOS

- Conocimientos en inglés. Todo el material esta en inglés.
- Principios básicos de electricidad y electrónica.
- Principios básicos de cableado estructurado.
- Considerar que el nivel de dificultad del contenido del curso es medio superior.



OBJETIVOS

- Al finalizar el curso los estudiantes serán capaces de:
 - Comprobar el fiel cumplimiento de los estándares ANSI/TIA e ISO/IEC en las instalaciones de edificaciones.
 - Diseñar, instalar, certificar, verificar y auditar las redes de cómputo de voz, datos y vídeo.
 - Certificar la velocidad y ancho de banda de la red de acuerdo con su categoría.
 - Evaluar la capacitación del personal instalador de una red de cómputo.
 - Comprobar la calidad y funcionalidad de los materiales.
 - Realizar un mejor control de las compañías contratistas que instalen redes.
 - Contar con el conocimiento de base para afrontar con éxito el examen de certificación RCDD®



CERTIFICACIÓN DISPONIBLE

- El curso prepara para rendir el examen de Certificación RCDD de BICSI.
- Certificado de Asistencia / Aprobación emitido por Cognos.



CONTENIDO

1. PRINCIPIOS DE TRANSMISIÓN

- 1.1. METALLIC MEDIA
- 1.2. ELECTRICAL CONDUCTORS
- 1.3. AMERICAN WIRE GAUGE
- 1.4. INSULATION
- 1.5. BALANCED TWISTED-PAIR CABLES
- 1.6. ENVIRONMENTAL CONSIDERATIONS
- 1.7. CABLE SHIELDING
- 1.8. DRAIN WIRES
- 1.9. ANALOG SIGNALS
- 1.10. TELEPHONY
- 1.11. DIGITAL SIGNALS
- 1.12. TYPES OF TRANSMISSION CIRCUITS
- 1.13. ASYNCHRONOUS AND SYNCHRONOUS TRANSMISSION.
- 1.14. DIGITAL HIERARCHY.
- 1.15. VIDEO TRANSMISSION.
- 1.16. TRANSMISSION LINE CONCEPTS.
- 1.17. BALANCED TWISTED-PAIR PERFORMANCE.
- 1.18. BALANCED TWISTED-PAIR CHANNEL PERFORMANCE.
- 1.19. BALANCED TWISTED-PAIR PERMANENT LINK PERFORMANCE.
- 1.20. BALANCED TWISTED-PAIR APPLICATIONS.
- 1.21. OPTICAL FIBER.
- 1.22. OPTICAL FIBER TRANSMITTERS.
- 1.23. OPTICAL FIBER RECEIVERS.
- 1.24. OPTICAL FIBER MEDIUM.
- 1.25. BANDWIDTH.
- 1.26. OPTICAL FIBER APPLICATIONS SUPPORT INFORMATION.
- 1.27. VERIFYING OPTICAL FIBER PERFORMANCE AND ELECTRONICS COMPATIBILITY.

- 1.28. SELECTING AN OPTICAL FIBER CORE SIZE TO APPLICATION OR ORIGINAL EQUIPMENT MANUFACTURER (OEM) SPECIFICATIONS.
- 1.29. SYNCHRONOUS OPTICAL NETWORK (SONET) AND SYNCHRONOUS DIGITAL HIERARCHY (SDH) CONCEPTS.

2. COMPATIBILIDAD ELECTROMAGNÉTICA

- 2.1. ELECTROMAGNETIC COMPATIBILITY (EMC).
- 2.2. ELECTROMAGNETIC SPECTRUM.
- 2.3. ELECTROMAGNETICS.
- 2.4. MEASURING ELECTROMAGNETIC COMPATIBILITY (EMC).
- 2.5. ELECTROMAGNETIC INTERFERENCE (EMI)—A PROBLEM.
- 2.6. ELECTROMAGNETIC COMPATIBILITY (EMC)—THE SOLUTION.
- 2.7. ELECTROMAGNETIC INTERFERENCE (EMI) AND CABLING.
- 2.8. ELECTROMAGNETIC QUALIFICATION PARAMETERS.
- 2.9. UNWANTED SIGNALS.
- 2.10. GROUNDING (EARTHING).
- 2.11. MINIMIZING ELECTROMAGNETIC INTERFERENCE (EMI).
- 2.12. CONSIDERATIONS FOR ELECTROMAGNETIC COMPATIBILITY (EMC) IN CABLING SYSTEMS.
- 2.13. INTERFERENCE REDUCTION IN SHIELDED ROOMS.
- 2.14. TELECOMMUNICATIONS CABLING WITHIN JOINT-USE TUNNEL.

3. ESPACIOS DE TELECOMUNICACIONES

- 3.1. TELECOMMUNICATIONS SPACES.
- 3.2. TELECOMMUNICATIONS SPACES CONSIDERATIONS.
- 3.3. TELECOMMUNICATIONS ROOMS (TRS) AND TELECOMMUNICATIONS ENCLOSURES (TES).
- 3.4. TELECOMMUNICATIONS ROOM (TR) AND TELECOMMUNICATIONS ENCLOSURE (TE) APPLICATIONS.
- 3.5. TELECOMMUNICATIONS ROOM (TR) DESIGN.
- 3.6. GENERAL REQUIREMENTS FOR ALL TELECOMMUNICATIONS ENCLOSURES (TES).
- 3.7. EQUIPMENT ROOMS (ERS).
- 3.8. EQUIPMENT ROOM (ER) DESIGN.
- 3.9. LOCATING THE EQUIPMENT ROOM (ER).
- 3.10. SPACE ALLOCATION AND LAYOUT.
- 3.11. CABLE INSTALLATION AND PATHWAYS.
- 3.12. ELECTRICAL POWER.
- 3.13. HEATING, VENTILATION, AND AIR-CONDITIONING (HVAC) ENVIRONMENTAL CONTROL.
- 3.14. MISCELLANEOUS CONSIDERATIONS.
- 3.15. DESIGN APPROVAL, BUILDOUT, AND FINAL INSPECTION.
- 3.16. ENTRANCE FACILITIES (EFS).

4. SISTEMAS DE DISTRIBUCIÓN DE BACKBONE (TRONCAL)

- 4.1. BACKBONE DISTRIBUTION SYSTEMS.

- 4.2. CABLING TOPOLOGIES.
- 4.3. HIERARCHICAL STAR CAMPUS BACKBONE DESIGNS.
- 4.4. TELECOMMUNICATIONS ROOMS (TRS) AND TELECOMMUNICATIONS ENCLOSURES (TES).
- 4.5. BUILDING BACKBONES.
- 4.6. CHOOSING MEDIA.
- 4.7. BACKBONE BUILDING PATHWAYS (INTERNAL).
- 4.8. MISCELLANEOUS SUPPORT FACILITIES.
- 4.9. BONDING AND GROUNDING (EARTHING).
- 4.10. BACKBONE PLANNING.
- 4.11. INDOOR HARDWARE.
- 4.12. ETHERNET IN THE FIRST MILE (EFM).

5. SISTEMAS DE DISTRIBUCIÓN HORIZONTALES

- 5.1. HORIZONTAL DISTRIBUTION SYSTEMS.
- 5.2. SECTION 1: HORIZONTAL CABLING SYSTEMS
- 5.3. SECTION 2: HORIZONTAL PATHWAYS
- 5.4. SECTION 3: ADA REQUIREMENTS

6. CABLEADO DE ITS Y CONEXIÓN DE HARDWARE

- 6.1. ICT CABLES AND CONNECTING HARDWARE.
- 6.2. BALANCED TWISTED-PAIR CABLES.
- 6.3. OPTICAL FIBER CABLES.
- 6.4. COAXIAL CABLES.
- 6.5. BALANCED TWISTED-PAIR CONNECTORS.
- 6.6. BALANCED TWISTED-PAIR CONNECTING BLOCKS.
- 6.7. OPTICAL FIBER CONNECTORS.
- 6.8. OPTICAL FIBER CONNECTING HARDWARE.
- 6.9. COAXIAL CONNECTORS.
- 6.10. COAXIAL CONNECTING HARDWARE.

7. SISTEMAS CONTRA INCENDIOS

- 7.1. FIRESTOP SYSTEMS.
- 7.2. FIRESTOP AND DISASTER AVOIDANCE.
- 7.3. FIRE-RESISTANCE RATED CONSTRUCTION.
- 7.4. FIRESTOP CONSIDERATIONS.
- 7.5. TESTING AND GUIDELINES FOR FIRESTOPS.
- 7.6. TYPES OF FIRESTOP SYSTEMS.
- 7.7. FIRESTOP FOR BRICK, CONCRETE BLOCK, AND CONCRETE WALLS.
- 7.8. FIRESTOP FOR FRAMED WALL ASSEMBLIES.
- 7.9. FIRESTOP FOR LATH AND PLASTER WALLS.
- 7.10. FIRESTOP FOR COMBINATION WALLS.
- 7.11. FIRESTOP FOR FLOOR ASSEMBLIES.

- 7.12. FIRESTOP FOR FLOOR/CEILING ASSEMBLIES.
- 7.13. STRUCTURAL STEEL FLOOR UNITS WITH CONCRETE FLOOR FILL WITHOUT SUSPENDEDCEILING MEMBRANES.
- 7.14. FIRESTOP FOR ROOF/CEILING ASSEMBLIES.
- 7.15. FIRE-RATED VERTICAL SHAFTS.
- 7.16. FIRESTOP FOR CURTAIN WALL FLOOR/CEILING SEALS.
- 7.17. GENERAL FIRESTOP CONSIDERATIONS.

8. TOMAS ELÉCTRICAS Y CONEXIÓN A TIERRA

- 8.1. BONDING AND GROUNDING (EARTHING).
- 8.2. ALTERNATING CURRENT (AC) GROUNDING (EARTHING) ELECTRODE SYSTEM.
- 8.3. EQUIPMENT GROUNDING (EARTHING) SYSTEM.
- 8.4. TELECOMMUNICATIONS BONDING INFRASTRUCTURE.
- 8.5. LIGHTNING EXPOSURE.

9. DISTRIBUCIÓN DE ENERGÍA

- 9.1. POWER DISTRIBUTION.
- 9.2. ALTERNATING CURRENT (AC) POWER.
- 9.3. AMERICAN WIRE GAUGE (AWG).
- 9.4. ALTERNATING CURRENT (AC) VOLTAGE QUALITY PROBLEMS.
- 9.5. POWER DISTRIBUTION FOR INFORMATION TECHNOLOGY EQUIPMENT (ITE) SPACES.
- 9.6. ELECTRICAL SAFETY.
- 9.7. POWER SYSTEM REDUNDANCY.
- 9.8. POWER CONDITIONING/POWER PROTECTION.
- 9.9. DIRECT CURRENT (DC) POWER.
- 9.10. INSTALLATION OF DIRECT CURRENT (DC) SYSTEMS.
- 9.11. BATTERIES.
- 9.12. POWER SYSTEM ALARMS.
- 9.13. POWER SYSTEM MONITORING AND CONTROL.
- 9.14. CONDUCTOR IDENTIFICATION.

10. ADMINISTRACIÓN DE TELECOMUNICACIONES

- 10.1. TELECOMMUNICATIONS ADMINISTRATION.
- 10.2. IDENTIFICATION METHODS.
- 10.3. IDENTIFICATION SYSTEMS.
- 10.4. LABELING AND RECORDKEEPING.
- 10.5. ADMINISTRATION OF LARGE TELECOMMUNICATIONS SPACES.

11. TESTEO DE CAMPO

- 11.1. FIELD TESTING OF STRUCTURED CABLING.
- 11.2. BALANCED TWISTED-PAIR CABLING TESTS.
- 11.3. BALANCED TWISTED-PAIR CABLING ACCEPTANCE TESTS.
- 11.4. COAXIAL CABLING TESTING.
- 11.5. OPTICAL FIBER CABLING TESTS.
- 11.6. OPTICAL FIBER CABLING ACCEPTANCE TESTS.
- 11.7. OPTICAL FIBER CABLING FIELD TESTING.
- 11.8. MAINTENANCE AND TROUBLESHOOTING FOR OPTICAL FIBER CABLING.
- 11.9. ADDITIONAL OPTICAL FIBER TROUBLESHOOTING TOOLS AND EQUIPMENT.

12. PLANTA EXTERIOR

- 12.1. OUTSIDE PLANT.
- 12.2. TELECOMMUNICATIONS SERVICE ENTRANCES.
- 12.3. UNDERGROUND ENTRANCES.
- 12.4. BURIED ENTRANCES.
- 12.5. AERIAL ENTRANCES.
- 12.6. OTHER TELECOMMUNICATIONS SERVICE ENTRANCE CONSIDERATIONS.
- 12.7. TERMINATING SPACE FOR TELECOMMUNICATIONS ENTRANCE FACILITIES.
- 12.8. TERMINATING CONDUIT INSIDE A BUILDING.
- 12.9. NETWORK INTERFACE (NI) LOCATIONS.
- 12.10. OUTSIDE BUILDING TERMINALS (PEDESTALS AND CABINETS) PEDESTAL
- 12.11. HARDWARE MOUNTED ON OUTSIDE WALLS.
- 12.12. DIRECT-BURIED PATHWAYS.
- 12.13. TRENCHES.
- 12.14. UNDERGROUND PATHWAYS.
- 12.15. CONDUIT GUIDELINES.
- 12.16. TERMINATING CONDUIT AT A DESIGNATED PROPERTY LINE.
- 12.17. MAINTENANCE HOLE GUIDELINES.
- 12.18. AERIAL PLANT PATHWAYS.

13. SISTEMAS PRIVADO DE DISTRIBUCIÓN DE TELEVISIÓN POR CABLE (CATV)

- 13.1. AUDIOVISUAL (AV) SYSTEMS.
- 13.2. FUNDAMENTALS.
- 13.3. TYPES OF SIGNALS.
- 13.4. ENVIRONMENTAL CONSIDERATIONS.
- 13.5. VISUAL DISPLAY SYSTEMS.
- 13.6. PROGRAM AUDIO AND SPEECH REINFORCEMENT SYSTEMS.
- 13.7. SIGNAL DISTRIBUTION SYSTEMS.
- 13.8. AUDIOCONFERENCING SYSTEMS.
- 13.9. VIDEOCONFERENCING SYSTEMS.
- 13.10. CONTROL SYSTEMS.
- 13.11. OVERHEAD PAGING SYSTEMS.
- 13.12. SOUND MASKING SYSTEMS.

13.13. DIGITAL SIGNAGE SYSTEMS.

13.14. CABLE TELEVISION DISTRIBUTION SYSTEMS.

14. SISTEMAS AUTOMATIZADOS DEL EDIFICIO

14.1. BUILDING AUTOMATION SYSTEMS (BAS).

14.2. BUILDING AUTOMATION SYSTEMS (BAS) INTERFACES WITH OTHER SYSTEMS.

14.3. BUILDING AUTOMATION SYSTEMS (BAS) COMMUNICATIONS NETWORKS.

14.4. BUILDING AUTOMATION SYSTEMS (BAS) ELECTRICAL CHARACTERISTICS.

14.5. PLANNING BUILDING AUTOMATION SYSTEMS (BAS) DISTRIBUTION CABLING.

15. DISEÑO DE LA RED DE DATOS

15.1. DATA NETWORKS.

15.2. OPEN SYSTEMS INTERCONNECTION (OSI) REFERENCE MODEL.

15.3. NETWORK HARDWARE.

15.4. NETWORK SOFTWARE.

15.5. NETWORK SUPPORTED SYSTEMS.

15.6. NETWORK DESIGN.

15.7. COMPUTER ROOMS.

15.8. CAMPUS AND MULTISITE NETWORK DESIGN.

16. INALAMBRICO (WIRELESS)

16.1. WIRELESS NETWORKS.

16.2. SERVICES AND APPLICATIONS.

16.3. FREQUENCY AND WAVELENGTH.

16.4. ELECTROMAGNETIC SPECTRUM.

16.5. WIRELESS SYSTEM DESIGN.

16.6. SELECTION OF TECHNOLOGY.

16.7. COMPONENTS OF A WIRELESS SYSTEM.

16.8. DISTRIBUTED ANTENNA SYSTEMS (DAS).

16.9. PERSONAL AREA NETWORKS (PANS).

16.10. WIRELESS LAN (WLAN) TECHNOLOGY.

16.11. WIRELESS LAN (WLAN) COMPONENTS.

17. SEGURIDAD FÍSICA Y SEGURIDAD ELECTRÓNICA

17.1. ELECTRONIC SAFETY AND SECURITY (ESS).

17.2. ELECTRONIC AND ELECTRICAL DOOR HARDWARE.

17.3. VIDEO SURVEILLANCE.

17.4. INTRUSION DETECTION.

17.5. FIRE DETECTION AND ALARM SYSTEMS (FDAS).

17.6. FIRE ALARM (FA) NOTIFICATION.

- 17.7. FIRE ALARM CONTROL PANELS (FACP). 17-39
- 17.8. DIGITAL ALARM COMMUNICATOR SYSTEM (DACS).
- 17.9. AREA OF REFUGE AND RESCUE TWO-WAY COMMUNICATION SYSTEMS.
- 17.10. MASS NOTIFICATION AND EMERGENCY COMMUNICATIONS (MNEC) SYSTEMS.

18. CENTROS DE DATOS

- 18.1. DATA CENTERS.
- 18.2. DATA CENTER REDUNDANCY AND AVAILABILITY.
- 18.3. STRUCTURED CABLING HIERARCHY FOR DATA CENTERS.
- 18.4. GUIDELINES FOR TELECOMMUNICATIONS CABLING, CABLE CONTAINMENT, EQUIPMENT RACKS, AND CABINETS.
- 18.5. DATA CENTER SECURITY.
- 18.6. OPERATION, OWNERSHIP COSTS, ENVIRONMENTAL IMPACT, AND EFFICIENCY.
- 18.7. DATA CENTER PLANNING CONSIDERATIONS.

19. CUIDADO DE LA SALUD

- 19.1. HEALTH CARE.
- 19.2. SPACE AND PATHWAY REQUIREMENTS AND CONSIDERATIONS.
- 19.3. NURSE CALL SYSTEMS.
- 19.4. CODE CALL SYSTEMS.
- 19.5. HOSPITAL SECURITY.
- 19.6. WIRELESS NETWORKS.
- 19.7. AUDIOVISUAL (AV) SYSTEMS.
- 19.8. PICTURE ARCHIVING AND COMMUNICATION SYSTEM (PACS).
- 19.9. PATIENT MONITORING.
- 19.10. RADIO FREQUENCY IDENTIFICATION (RFID)–BASED SYSTEMS.
- 19.11. INTERACTIVE PATIENT ENTERTAINMENT AND EDUCATION SYSTEMS.
- 19.12. WAYFINDING AND SIGNAGE.
- 19.13. REGULATORY BODIES AND ORGANIZATIONS.

20. CABLEADO RESIDENCIAL

- 20.1. RESIDENTIAL CABLING.
- 20.2. COMPONENTS.
- 20.3. PLANNING THE CABLING SYSTEM.
- 20.4. ROUGH-IN CABLING.
- 20.5. FINISH CABLING.



BENEFICIOS

- Al finalizar este curso los participantes podrán diseñar, instalar, certificar, verificar y auditar las redes de cómputo de voz, datos y vídeo.