ELECTRONIC SYSTEMS CERTIFIED (ESC)
International (English)

This document outlines the body of knowledge on which the certification exam is built. Within each domain, the content which needs to be mastered is the fundamental knowledge and terminology, not advanced techniques or problem solving. A comprehensive overview of this material can be found in the Fundamentals of Residential Electronic Systems book, as well as in CEDIA eCourses and other resources. To identify all of the resources available, see the ESC Certification Exam Prep Resources document.

CEDIA®
ELECTRONIC SYSTEMS CERTIFIED

Domain 1 Industry Overview and Fundamentals (31%)

KNOWLEDGE AREA 1
INTRODUCTION TO THE INDUSTRY (8%)

1. Definition and scope of the industry; history, trends, most commonly installed sub-systems
2. CEDIA history, mission, and ethical standards
3. Company types: integrators, retailers, distributors, manufacturer reps, manufacturers, specialty designers
4. Project stakeholders; clients, architects, interior designers, builders, other trades
5. Career paths

KNOWLEDGE AREA 2
JOBSITE AND BUSINESS PROFESSIONALISM (6%)

1. Personal/professional behavior and appearance
2. Project documentation

KNOWLEDGE AREA 3
INDUSTRY-RELATED MATH (6%)

1. Applied jobsite mathematics
2. Mathematic conversions (fraction/decimal and metric/standard)

KNOWLEDGE AREA 4
FUNDAMENTALS OF JOBSITE SAFETY, CODES, AND STANDARDS (6%)

1. General safety practices, basic first aid, and emergency procedures
2. Understanding of applicable codes, standards, and recommended practices and their role and importance
3. Proper use and care of tools

KNOWLEDGE AREA 5
THE BUSINESS OF RESIDENTIAL TECHNOLOGIES (5%)

1. Small-business fundamentals
2. Project management fundamentals
3. Servicing high-end clientele
4. Sales, service, recurring revenue, and monetizing design and engineering

Domain 2 Infrastructure (14%)

KNOWLEDGE AREA 1
PRE-WIRE PHASE (8%)

1. Construction methods and materials: wood frame, metal stud, and concrete
2. Cable/wire types and applications
3. Cabling topologies, service entries, wiring for the future
4. Device placement and cabling practices/labeling

KNOWLEDGE AREA 2
TRIM-OUT PHASE (6%)

1. Termination methods and plate-work
2. Termination tools and test equipment
3. Cable identification (labeling)

Domain 3 Equipment Installation (10%)

KNOWLEDGE AREA 1
RACKS AND CABINETS (5%)

1. Cabinets and equipment racking systems
2. Basic cable/interconnect management

KNOWLEDGE AREA 2
EQUIPMENT MOUNTING (5%)

1. Mounting hardware (brackets, lags, toggle bolts, drywall anchors, etc.)
2. Measurement tools and techniques
3. Proper installation techniques
4. Retrofit and safety considerations

Domain 4 Sub-Systems Overview (45%)

KNOWLEDGE AREA 1
AUDIO (9%)

1. Basic audio device recognition (receiver, amplifier, speaker types, etc.)
2. Basic audio terminology (frequency, wavelength, tweeter, crossover, etc.)
3. Audio signals and interconnects (analog and digital)
4. Fundamentals of multi-room audio
5. The role of room acoustics and sound isolation issues in audio performance

KNOWLEDGE AREA 2
VIDEO (4%)

1. Basic video device recognition (sources, display technologies)
2. Basic video terminology (pixel, resolution, brightness, etc.)
3. Video signals and interconnects (analog and digital, HDMI)

KNOWLEDGE AREA 3
HOME THEATER/MEDIA ROOM (7%)

1. Design and performance goals
2. System components and their function
3. Basic layout and configuration, recommended practices

KNOWLEDGE AREA 4
NETWORKING (5%)

1. Basic network device recognition (router, switch, access point, etc.)
2. Basic data and networking terminology (bits, bytes, bandwidth, etc.)
3. Basic network topologies (wired and wireless)

KNOWLEDGE AREA 5
OTHER SUB-SYSTEMS (4%)

1. Automated lighting components and operation
2. Motorized devices: shades, lifts, mounts, etc.
3. Energy monitoring and management
4. Other devices and sub-systems (security, HVAC, telephone, etc.)

KNOWLEDGE AREA 6
SYSTEMS CONTROL (3%)

1. Basic control device recognition (remote, keypad, processor, etc.)
2. Basic control systems terminology (discrete code, toggle command, macro, etc.)
3. Basic control protocols (IR, RF, RS232, IP)

KNOWLEDGE AREA 7
POWER QUALITY AND MANAGEMENT (6%)

1. Power types and quality issues
2. Basic device recognition (surge protector, battery backup, power conditioner, etc.)
3. Basic electricity and electrical distribution

KNOWLEDGE AREA 8
FINAL SYSTEM CALIBRATION, TESTING, AND COMMISSIONING (7%)

1. Fundamental goals and techniques of audio and video calibration
2. Final system setup and client orientation