

This guide shows the various resources which are available year-round to prepare for the CEDIA electronic systems certified designer (ESC-D) exam, and is focused on online learning and CEDIA books. Individual topics within each task are associated with the courses and other resources which address them. Online courses with the “LES” extension the course code are “lessons” (shorter presentations with one or two learning objectives, often pulled from the larger, more comprehensive ecourses). In addition, CEDIA offers “Boot Camp” type training in Indianapolis, and hundreds of instructor-led classes each year at CEDIA EXPO and other training events. See these course listings at www.cedia.net/train/in-person-training



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DESIGNER

KEY TO ABBREVIATIONS:

F-RES = [CEDIA FUNDAMENTALS OF RESIDENTIAL ELECTRONIC SYSTEMS](#), FOLLOWED BY /#, INDICATING CHAPTER NUMBER

A-RES = [CEDIA ADVANCED RESIDENTIAL ELECTRONIC SYSTEMS](#), FOLLOWED BY /#, INDICATING CHAPTER NUMBER

PMBOK = PROJECT MANAGEMENT BODY OF KNOWLEDGE

DOMAIN I: NEEDS ASSESSMENT

Task 1: Initiate and investigate the scope of a project using a structured information gathering methodology to obtain customer information.

General	A-RES/14
Client Discovery	ESD161B Design Thinking and Client Discovery A-RES/14
Client Relations	ESCR101 Customer Service Basics A-RES/17

CEDIA EXAM PREP RESOURCES

Task 2: Assess the site conditions by reviewing architectural plans and/or visiting the site in order to pre-empt architectural and structural complications.

Working with Plans

[ESD162 Design Documents](#)
A-RES/15

Task 3: Establish the budget requirements by setting realistic expectations of deliverables while explaining tangible quality differences in order to deliver the optimum performance/cost balance for the systems.

General

PMBPOK

Value Engineering

[ESD161B Design Thinking and Client Discovery](#)
A-RES/14

Task 4: Determine internal vs. external resource requirements for the system under design for the purpose of completing cost estimation.

General

PMBOK

Managing Resources

[ESPM101 Introduction to Project Management](#)
A-RES/16

DOMAIN II: PROJECT DESIGN

Task 1: Create functional specifications by translating the results of the needs assessment into activity based scenarios that can be understood by all project stakeholders.

General

A-RES/14

Functional Specs

[ESD161B Design Thinking and Client Discovery](#)

CEDIA EXAM PREP RESOURCES

Task 2: Create physical specifications by translating the results of the functional specifications into system requirements.

General	Home Theater Boot Camp
A/V Infrastructure	EST105B Cable & Connector Properties FRES/6 A-RES/2
Sound and Audio Basics	EST225 Audio Technologies for Technicians FRES/9
Amplifiers	EST225LES1 Amplifier Specs A-RES/4
Digital Audio	EST225LES2 Digital Audio Signals A-RES/4
Standing Waves	EST225LES3 Room Modes A-RES/4,6 CEA/CEDIA CEB-22
Distributed Audio	ESD211 Fundamentals of Distributed Audio Systems FRES/10 A-RES/4
New Distributed Audio Technologies	A-RES/4
Home Theater Room and Acoustics	ESD232 Home Theater Room Design A-RES/6 CEA/CEDIA CEB-22
Home Theater Design	ESD131 Fundamentals of Home Theater Design FRES/12 A-RES/6 CEA/CEDIA CEB-22, 23, 24

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Surround Sound	ESD232LES1 Surround Sound Speaker Configuration FRES/12 A-RES/4
Acoustics and Psychoacoustics	ESD301, 302, 303 Home Theater Audio & Acoustics Part I, 2, 3
Display Technologies	EST211 Video Display Technologies for Technicians FRES/11 A-RES/5
3D Television	EST211LES1 3D Basics A-RES/5
Aspect Ratio	EST211LES3 Aspect Ratios A-RES/5
Display Size	White Paper: Selecting Display Size Based on Room Size and Seating A-RES/6 CEA/CEDIA CEB-23
4K Television	ESD0034 Understanding UltraHD/4K Technology FRES/11 A-RES/5
HDMI	EST056LES1 HDMI Introduction White Paper: HDMI Fundamentals A-RES/5
Analog/Digital Broadcast Television	A-RES/5
Network Basics	FRES/13 A-RES/10

CEDIA EXAM PREP RESOURCES

Network Infrastructure	EST233 Network Cabling Infrastructure F-RES/6 A-RES/2
Network Configuration	EST243 IP for Technicians A-RES/10
Network Security	EST243LES1 Network Security A-RES/10,11,12
MAC Addresses	EST243LES2 MAC Addresses A-RES/10
Wireless Networking	EST253 Wireless Network Technologies A-RES/11
WiFi Channels	EST253LES1 WiFi Channel Selection A-RES/11
Wireless Networking	EST253LES2 Wireless Technologies A-RES/11
Security, Alarm, Surveillance	EST270 Fundamentals of Residential Security Systems F-RES/17 A-RES/13
Security Systems	EST270LES1 Security System Basics FRES/17 A-RES/13
Power Conditioning	EST304 Power Quality & Conditioning FRES/11 A-RES/8
Thermal Management	A-RES/8 CEA/CEDIA CEB-24

CEDIA EXAM PREP RESOURCES

Task 3: Define the programming specification from the functional specification in order to determine what is to be controlled, the method and complexity of control, and the operational parameters including scripts, zone maps, and input/output relationships for the full integration of the system.

General	EST162 Introduction to Control & User Interfaces F-RES/19 A-RES/7
Control and Automation	ESD121LES1 Home Control vs. Home Automation F-RES/19 A-RES/7

Task 4: Create the user interface specification by proposing physical control arrangements in order to provide control consistent with client needs.

General	F-RES/19 A-RES/7
User Interfaces	EST162 Introduction to Control & User Interfaces F-RES/19 A-RES/7

Task 5: Direct the creation and evaluation of prototypes and/or working mock-ups to ensure design requirements.

General	A-RES/14
Prototypes, Mockups	ESD161B Design Thinking and Client Discovery A-RES/14

CEDIA EXAM PREP RESOURCES

DOMAIN III: DESIGN DOCUMENTATION	Online Code	Online Title	Books	Other Resources
<p>Task 1: Create a proposal (bill of material, resource list, and labor products) based on the cost estimate by generating appropriate documentation in order to communicate the requirements of the project.</p>				
General		ESD162 Design Documents F-RES/2 A-RES/15		
<p>Task 2: Generate electronic system plans for distribution to relevant parties by preparing or modifying architectural plans in order to determine the location of devices and wire routes, including installation and construction notes.</p>				
General		ESD162 Design Documents F-RES/2 A-RES/15		
<p>Task 3: Create cable documentation (i.e., cabling plan and schedule) by describing the origin, destination, and type of each wire along with associated devices for distribution to associated trades.</p>				
General		ESD162 Design Documents F-RES/2 A-RES/15		
<p>Task 4: Generate block diagram (single-line drawing) by showing basic system level interconnection between components and sub-systems in order to troubleshoot and illustrate signal flow and functionality.</p>				
General		ESD162 Design Documents F-RES/2 A-RES/15		
<p>Task 5: Generate point-to-point wiring diagram by describing the specific input-output, wire and connector types, and method of interconnection in order to document how the components will be connected.</p>				
General		ESD162 Design Documents F-RES/2 A-RES/15		

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DOMAIN IV: DESIGN MANAGEMENT				
	Online Code	Online Title	Book/Chapter	Other Resources
Task 6: Compile as-built drawings and Operations/Maintenance manuals by updating all post-installation construction documents.				
General		ESD162 Design Documents F-RES/2 A-RES/15		
Task 7: Prepare test specifications to verify system performance and functionality.				
Video Calibration		EST311LES1 Video Calibration Metrics A-RES/5		
Audio Calibration		EST325 Audio Setup and Calibration A-RES/5 EST320LES1 Graphic and Parametric EQ Discussion F-RES/9 EST325LES1 Audio Calibration A-RES/4 EST326LES2 Audio Calibration Metrics		
DOMAIN IV: DESIGN MANAGEMENT				
	Online Code	Online Title	Book/Chapter	Other Resources
Task 1: Assess the impact of change orders on the overall design.				
General		ESD162 Design Documents A-RES/15		
The Design Process		ESD161B Design Thinking and Client Discovery A-RES/14		
Task 2: Monitor progress of the project to ensure design compliance.				
General		ESPM101 Introduction to Project Management A-RES/14 PMBOK		

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YOU MAY WISH TO EXPLORE SOME TOPICS IN MORE DETAIL IN ORDER TO GAIN MORE ADVANCED KNOWLEDGE, OR PREPARE FOR ADDITIONAL CERTIFICATIONS. SHOWN HERE ARE SOME ADDITIONAL RESOURCES WHICH MIGHT INTEREST YOU.

Design Documents	Webinar: The Future of Design Documents
Subcontractors	White Paper: Increasing Profits: How to Best Utilize Subcontractors
Wireless Audio	White Paper: Wireless Audio Solutions: Technologies and Best Practices
Hi Rez Audio	Webinar: Success With High Resolution Audio Sources
HDMI	White Paper: HDMI Installation Best Practices Webinar: HDMI 2.0: A Look Into the Standard
Video Distribution	Webinar: HDBaseT and UltraHD/4K
Telepresence	White Paper: Telepresence Opportunities for the Home Technology Professional
Infrastructure	Webinar: Gigbit+ Infrastructure: Building the Future with Fiber Optic and Cat6a Cabling Document: 16/4 Color Coding Document: AWG Reference Chart Document: Attenuation of Coaxial Cable
Emerging Technologies	Webinar: Compliance Issues for the Internet of Things
Mobile Devices	White Paper: Mobile Devices Pt.2: Ten Steps to Creating a Robust Wireless Network White Paper: Mobile Devices Pt.3: Using Mobile Devices as a Control Platform Webinar: Taking Advantage of the Mobile Device Revolution: Designing Control for Smart Phones and Tablets

CEDIA EXAM PREP RESOURCES

Network Security	White Paper: Network Security Best Practices
Voice & Gesture Recognition	Webinar: Where Have All My Buttons Gone? The Changing Landscape of Control
Home Health Care	Webinar: Home Health Care: Technologies and Opportunities
Lighting	White Paper: Dimming CFLs White Paper: Dimming LEDs Webinar: Connected Luminaires
Change Orders	White Paper: Increasing Profits: How to Get Paid for What You Do by Managing Change
Documentation	Webinar: The Future of Design Documents
Installation Checklist	Document: Residential Electronic Systems - Common Errors Checklist