

CEDIA EST II

Job Task Analysis (JTA) & Course Guide

The CEDIA University courses noted below address multiple exam task areas. It is imperative the student use their Pre-test Assessment results to focus their study on their determined areas of weakness. This JTA will help the student to further specify their areas of weakness and choose the appropriate course of study.

Presupposed knowledge is 2+ years of field experience as a Technician.

NOTE: CEDIA TRM = Technical Reference Manual

Domain I: General Technician Roles and Responsibilities	Instructor Led BASIC	Instructor Led ADV	E-learning	Other Resources
<i>Task 1: Maintain a "safety first" mindset by understanding and following personal and property safety procedures and preventing accidents in order to prevent harm to self and others.</i>	EST101, EST200		ESPA Online Review	OSHA Regs 1910 & 1926, NEC 2011, ESPA TM05
Knowledge of:				
1. Applicable OSHA codes/articles specific to personal safety and accident prevention (both on-site and off)				
2. Applicable NEC codes specific to personal safety and accident prevention				
3. Applicable construction codes specific to safety and property protection				
4. Motor Vehicle safety and accident prevention				
5. Basic First Aid treatments and procedures for minor incidents				
6. Emergency procedures for major incidents				
7. Typical "Tailgate" Safety Meeting types of information, rules and/or procedures				
8. Company safety policies				
9. Proper use and care of hand and power tools				
10. Proper use and care of ladders and scaffolds				
Skill in:				
1. Interpreting applicable codes/laws				
2. Analyzing a situation and choose/apply the correct solution				
3. Recognizing potentially hazardous situations and react accordingly				
4. Basic first aid techniques				
5. Emergency procedures				

6. Operating a motor vehicle safely (1.1.16)				
7. Operating job related heavy equipment (personnel lifts, etc...) safely				
8. Care and use of personal protective equipment(PPE)				
9. Safe use of hand and power tools				
10. Safe use of ladders and scaffolds				
<i>Task 2: Represent the company by demonstrating appropriate professional behavior, reporting work activities, and engaging in best practices.</i>	EST101, EST200	ESD162		
Knowledge of:				
1. Typical company reporting methods				
2. Typical employment (HR) issues				
3. Company management structure and chain of command (communications)				
4. Timecards, Work/Change orders (think daily, on-going personal and project tracking reporting methods)				
5. Personal/Professional Behavior and Appearance				
6. Workplace/jobsite etiquette				
7. The importance and necessity of typical employment procedures				
Skill in:				
1. Reading and interpreting common company documents				
2. Using personal and project tracking/reporting methods				
3. Follow directions accurately				
4. Using clear, concise communications				
5. Handling difficult situations/conflict resolution				
6. Working with others/trades				
<i>Task 3: Use project documentation by interpreting, creating or modifying appropriate field documents as required in order to confirm compliance with design specifications.</i>	EST101, ESD162	ESD162	ESPA Online Review	CEDIA TRM, ESPA TM01
Knowledge of:				
1. Proposals, Bill of Materials, Pick List, Inventory Logs				
2. System Overviews/Summaries (Functional)				
3. Plans (Architectural)				
4. Schedules (Time, Wire, Materials, etc..)				
5. Charts				
6. Drawings (Block Diagrams, One-Line Drawings, Point-to-Point Schematics, Cabinetry, Mechanical, etc...)				
7. Instruction and Service Manuals				
8. Understand the importance and proper use for typical field documents				
9. Basic redlines and document updates				

Skill in:
1. Read and interpret typical field documents
2. Creating necessary documentation that is clear and concise for others to follow
3. Modify documentation properly using approved methods
4. Assist project supervisor in document revision(redlines) / as-built
5. Writing clearly and legibly
<i>Task 4: Compute project related data using relevant technical and mathematical equations, terms, and principles in order to ensure successful completion of work.</i>
Knowledge of:
1. Algebra
2. Geometry
3. Electronics/Industry specific Math
4. Decibels
5. Fractions/Decimal (convert)
6. Ohms Law
7. Basic Electricity and Power Management (i.e., high voltage types, outlets types, power supplies, power distribution, etc...)
8. Basic Audio (i.e., signal types, levels, frequencies, noise, etc...)
9. Basic Video (i.e., signal types, levels, frequencies, noise, RF, etc...)
10. Basic Communications (i.e., telephone, intercom, signal types, signal levels/voltages, etc...)
11. Basic Data and Networking (i.e., baud rates, signal types, data rates, IP, etc...)
12. Basic Control Systems (data rates, polarity, relays, contact closure, voltage, meta date, feedback)
Skill in:
1. Interpreting typical industry related mathmatics
2. Interpreting typical industry related terminology
3. Understanding when and how to properly use industry specific mathematics
4. Understanding when and how to properly use industry specific terminology
5. Solving typical industry related problems using proper mathematic equations
6. Converting fractions to decimals and decimals to fractions
7. Application of Ohms Law

EST101, EST108	EST225	ESPA Online Review	CEDIA TRM, ESPA TM03
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Domain II: Infrastructure (Pre-wire & Trim-out)	Instructor Led BASIC	Instructor Led ADV	E-learning	Other Resources
<p><i>Task 1: Pre-wire an electronic system as specified in order to facilitate proper performance of audio, video, control, and related subsystem devices.</i></p>	EST101, EST105, EST200	EST211, EST233, EST312	ESPA Online Review	CEDIA TRM, TIA-570B, NEC 2011, ESPA TM01, ESPA TM02, ESPA TM04
Knowledge of:				
1. Cable/wire types, applications				
2. Construction/structural techniques/requirements/issues				
3. Device Installation techniques				
4. Device placement				
5. Wire dressing				
6. Ventilation				
7. Space requirements				
8. Suspended/hanging device requirements				
9. Outside service provider requirements (Telco/CATV/ISP/SAT)/ Demarcation point				
10. Fire rated back boxes and other special circumstance devices and provisions (be careful not to get "regionally" specific...general nationwide situations/requirements only)				
11. Wire/cabling identification (types/labeling)				
Skill in:				
1. Ability to choose proper wire/cable for a specific purpose				
2. Understanding of proper installation methods/requirements of prewire materials				
3. Installing mounting devices (rings, brackets, backing, back-boxes, etc...)				
4. Applying theory to practical				
5. Deductive Reasoning, Problem Solving				
6. Tool Usage				
7. Communicating with other trades proficiently				
8. Understands foundational outside service provider requirements (Telco, CATV, ISP, SAT)				

<i>Task 2: Trim-out an electronic system by labeling, terminating, and testing cables and properly mounting and installing trim related devices in order to support installation of audio, video, control, and other subsystem devices.</i>	EST101, EST105	EST306, EST312	ESPA Online Review	CEDIA TRM, CEA-2030, ESPA TM02, ESPA TM04
Knowledge of:				
1. Termination methods of all signal types				
2. Types of terminating devices and their appropriate use				
3. Applicable Codes and Standards specifically related to "Trim-out" activities				
4. Typical "Trim" related tools and their proper use				
5. Test tools/Verify Results				
Skill in:				
1. Properly terminating all cable/wire/signal types				
2. Choosing/identifying typical termination devices				
3. Interpreting applicable codes and standards				
4. Testing/verification of proper termination/signal quality				
5. Troubleshooting/correcting test results				
6. Using label makers				
7. Cable dressing				
8. Reading/filling out cable schedules				
Domain III: Equipment Mounting	Instructor Led BASIC	Instructor Led ADV	E-learning	Other Resources
<i>Task 1: Install equipment into a rack or cabinet while providing for proper ventilation, power management, and mounting considerations in order to facilitate ease of use and maximum performance.</i>	EST200	EST312, EST320		Manufacturer White Papers
Knowledge of:				
1. Cabinet Construction methods				
2. Theoretically correct equipment layout				
3. Safe and secure equipment mounting techniques/methods				
4. Ventilation techniques - active and passive				
5. Ventilation requirements for specific equipment				
6. Risks associated with improper ventilation				
7. Cabinet and rack construction methods that aide ventilation				
Skill in:				
1. Identifying various cabinet parts				
2. Laying out equipment properly in a cabinet (theoretically correct)				
3. Mounting equipment in a cabinet properly				
4. Constructing racks				

5. Identifying different rack types/specific uses				
6. Installing ventilation equipment				
7. Proper management of cable				
<i>Task 2: Mount mechanically system devices such as camera housings, flat panel displays and projectors brackets or other mechanical devices by selecting and installing proper brackets, housings and mounting hardware in order to provide proper performance and safety</i>	EST200, EST211	EST312, EST320		ESPA TM04
Knowledge of:				
1. Types of display mounting brackets and their uses				
2. Types of projector mounting brackets and their uses				
3. Types of camera mounting brackets, housings and their uses				
Skill in:				
1. Choosing and installing various types of display brackets and mounting devices				
2. Choosing and installing various types of projector brackets and mounting devices				
3. Choosing and installing various types of camera brackets, housings and mounting devices				
<i>Task 3: Install power management devices such as surge suppressors, battery backups, and power conditioners in order to ensure safe and maximized performance of installed systems.</i>		EST304		CEDIA TRM
Knowledge of:				
1. Basic Device Recognition				
2. Basic Device Purpose				
3. Basic Electricity and Electrical Distribution				
Skill in:				
1. Choosing correct devices for the job				
2. Basic Set-up and use of devices				
Domain IV: Audio/Video Systems Setup	Instructor Led BASIC	Instructor Led ADV	E-learning	Other Resources
<i>Task 1: Set up basic audio devices such as sources, amplifiers, and speakers in order to produce a desired listening experience. (4.1.0)</i>	EST225, ESD131	EST320, EST325		CEDIA TRM
Knowledge of:				
1. Basic Audio Device Recognition (Analog vs. Digital)				
2. Basic Audio Device Purpose				
3. Basic Signal Flow				
Skill in:				

1. Choosing correct device for job				
2. Basic installation of audio related devices				
<i>Task 2: Set up basic video devices such as sources and displays in order to produce a desired viewing experience.</i>	EST200, EST211, ESD131, ESD151	EST311, EST320		CEDIA TRM
Knowledge of:				
1. Basic Video Device Recognition (Analog vs. Digital)				
2. Basic Video Device Purpose				
Skill in:				
1. Basic installation of video related devices				
Domain V: Communications (Telephony and Data)	Instructor Led BASIC	Instructor Led ADV	E-learning	Other Resources
<i>Task 1: Set up basic telephony devices such as handsets and intercoms in order to establish basic voice communication.</i>	EST101, EST233			CEDIA TRM
Knowledge of:				
1. Basic Phone Device Recognition (includes doorbells, intercoms, etc)				
2. Basic Phone Device Purpose				
Skill in:				
1. Basic installation of phone related devices				
<i>Task 2: Set up basic data network devices such as switches and routers in order to facilitate basic data communication.</i>	EST233, EST243			CEDIA TRM
Knowledge of:				
1. Basic Data Device Purpose				
Skill in:				
1. Basic installation of data related devices				
Domain VI: Integrated Control Systems Setup	Instructor Led BASIC	Instructor Led ADV	E-learning	Other Resources
<i>Task 1: Set up basic control devices such as remotes, keypads, volume controls, touch screens in order to allow user control over electronic devices and systems.</i>	ESD121, EST262			CEDIA TRM
Knowledge of:				
1. Basic Remote Control Device Recognition				
2. Basic Remote Control Device Purpose				
3. Basic Remote Control Protocols and Methods				
4. Interface Technologies (RS232, RS485, IR, contact closure, relays, IP)				
Skill in:				
1. Basic installation of remote control related devices				

2. Basic CCTV/Security Device Purpose				
3. Basic installation of CCTV and Security related devices				
<i>Task 2: Set up basic security and surveillance devices such as cameras and sensors in order to provide basic monitoring of secured areas.</i>	EST270			CEDIA TRM
Knowledge of:				
1. Basic CCTV/Security Device Recognition				
<i>Task 3: Set up terrestrial antenna, cable and satellite TV systems, distribution and equipment in order to provide proper reception of TV signals.</i>	EST101			CEDIA TRM
Knowledge of:				
1. Basic CATV/DBS Device Recognition				
2. Basic CATV/DBS Device Purpose				
Skill in:				
1. Basic installation of CATV/SAT related devices				
2. Basic set-up and use of CATV/SAT related devices				
Domain VII: System Verification and Testing	Instructor Led BASIC	Instructor Led ADV	E-learning	Other Resources
<i>Task 1: Review the installed system in order to confirm compliance with design specifications.</i>	EST101,	EST306, EST320, EST325	ESPA Online Review	CEDIA TRM, ESPA TM02
Knowledge of:				
1. All system components (not so much individually but how it functions as a system)				
2. System wiring, termination, signal flow				
3. Proper system operation (is audio coming out of speakers, video on screen)				
4. Audio and video formats, resolution, data rate, surround modes				
5. Calibration procedures and terminology				
Skill in:				
1. Deductive reasoning				
2. Interpretation of results				
3. Using/manipulating equipment and all associated devices				
4. Reading instruction manuals				
5. Verifying component operation				
6. Navigating menus				
7. Systematic, methodical procedures				
8. Recording results accurately				
9. Using test equipment, meters, continuity, data rate, RF, etc.				

<i>Task 2: Verify system performance by testing device and system functionality in order to confirm proper operation.</i>	EST101	EST306, EST320	ESPA Online Review	CEDIA TRM, ESPA TM02, CEDIA HDMI White Papers
Knowledge of:				
1. Techniques and methods for troubleshooting devices/systems				
2. Basic understanding of methods to correct				
3. Use of appropriate commonly used, basic test equipment				
4. Common failure modes				
5. Troubleshooting Guides				
Skill in:				
1. Using/manipulating test equipment				
2. Deductive reasoning, troubleshooting				
3. Diplomacy/tact , accountability, and patience				
4. Basic troubleshooting				