

# TECHNOLOGY INTEGRATION/2: AUTOMATION, VOICE, & ENTERTAINMENT (90 Hours)

Course No.: 72-85-85

## COMPETENCY CHECKLIST

Student Name \_\_\_\_\_

Teacher Name \_\_\_\_\_ School Site \_\_\_\_\_

Start Date \_\_\_\_\_ Completion Date \_\_\_\_\_ Certificate Date \_\_\_\_\_

Teacher Signature \_\_\_\_\_ Student Signature \_\_\_\_\_

(Signatures verify completion of course competencies)

### A. INTRODUCTION AND SAFETY (4 hrs)

- \_\_\_\_\_ 1. Scope and purpose of course
- \_\_\_\_\_ 2. Course content as part of Linked Learning
- \_\_\_\_\_ 3. Classroom policies and procedures
- \_\_\_\_\_ 4. Jobs in field that impact TI installers
- \_\_\_\_\_ 5. Promoting gender equity in field
- \_\_\_\_\_ 6. OSHA laws governing technicians
- \_\_\_\_\_ 7. Impact of EPA legislation on industry
- \_\_\_\_\_ 8. Procedures for hazardous waste disposal
- \_\_\_\_\_ 9. NEC and its role in working conditions
- \_\_\_\_\_ 10. MSDS as it applies to the TI field
- \_\_\_\_\_ 11. LEED Green Building Rating System
- \_\_\_\_\_ 12. Codes and applications to the TI field
- \_\_\_\_\_ 13. CA Title 24 Energy Efficiency Standards
- \_\_\_\_\_ 14. First aid/emergency procedures
- \_\_\_\_\_ 15. Safety test

### B. RESOURCE MANAGEMENT REVIEW (1 hr)

- \_\_\_\_\_ 1. Review definitions of listed terms
- \_\_\_\_\_ 2. Management of listed resources
- \_\_\_\_\_ 3. Examples of effective management
- \_\_\_\_\_ 4. Benefits of effective resource management
- \_\_\_\_\_ 5. Economic benefits and liabilities

### C. HOME AUTOMATION SYSTEMS INTEGRATION\* (20 hrs)

- \_\_\_\_\_ 1. Define listed terms related to topic
- \_\_\_\_\_ 2. Regulations: home controllers & gateways
- \_\_\_\_\_ 3. Industry standards for listed equipment
- \_\_\_\_\_ 4. Differences: home controllers vs. gateways
- \_\_\_\_\_ 5. Input/output features of home controller
- \_\_\_\_\_ 6. Features on touch screen control devices
- \_\_\_\_\_ 7. Programmable features of home controller
- \_\_\_\_\_ 8. Programming intelligent remote controls
- \_\_\_\_\_ 9. How ICS is used in home networks

- \_\_\_\_\_ 10. ICS vs. hardware gateways
- \_\_\_\_\_ 11. Connections to gateway in home network
- \_\_\_\_\_ 12. Internet appliances that work w/gateway
- \_\_\_\_\_ 13. Using power lines for network connectivity
- \_\_\_\_\_ 14. HomePNA Network technology
- \_\_\_\_\_ 15. Discuss/compare for listed protocols
- \_\_\_\_\_ 16. Broadband wireless Internet access services
- \_\_\_\_\_ 17. Industry standards for home components
- \_\_\_\_\_ 18. Demo a wired home automation system
- \_\_\_\_\_ 19. Demo a wireless home automation system
- \_\_\_\_\_ 20. Preventative maintenance techniques

### D. TELECOMMUNICATIONS\* (25 hrs)

- \_\_\_\_\_ 1. Define listed terms related to topic
- \_\_\_\_\_ 2. Components of the PSTN
- \_\_\_\_\_ 3. Regulations for telecommunications devices
- \_\_\_\_\_ 4. Part 68 of the FCC rules: PBX & KTS systems
- \_\_\_\_\_ 5. Role of ACTA regarding terminal equipment
- \_\_\_\_\_ 6. Digital communications vs. PSTN system
- \_\_\_\_\_ 7. Draw diagram of a KSU and its components
- \_\_\_\_\_ 8. KSU, KSU-less, and hybrid KSU systems
- \_\_\_\_\_ 9. Interoperability problems w/KSU components
- \_\_\_\_\_ 10. 2 separate standards terminating RJ-45
- \_\_\_\_\_ 11. Cabling for structured wiring telecom system
- \_\_\_\_\_ 12. Termination pin numbers & wire color codes
- \_\_\_\_\_ 13. Hookups/color codes for RJ-11 telephone jacks
- \_\_\_\_\_ 14. IDC terminations in residential telephone cables
- \_\_\_\_\_ 15. IP networks in telecommunications
- \_\_\_\_\_ 16. Purpose of a VoIP gateway
- \_\_\_\_\_ 17. 3 types of connectivity for VoIP telephony
- \_\_\_\_\_ 18. Use of Bluetooth in telecommunications
- \_\_\_\_\_ 19. Demo listed techniques
- \_\_\_\_\_ 20. Demo wired automation system devices
- \_\_\_\_\_ 21. Demo wireless automation system devices
- \_\_\_\_\_ 22. Preventative maintenance techniques

## **E. HOME AUDIO AND VIDEO FUNDAMENTALS\***

(35 hrs)

- \_\_\_\_\_ 1. Define listed terms related to topic
- \_\_\_\_\_ 2. Dedicated system vs. whole home design
- \_\_\_\_\_ 3. Standards for audio and video equipment
- \_\_\_\_\_ 4. Components in typical whole-home design
- \_\_\_\_\_ 5. HTIB as an entry level product
- \_\_\_\_\_ 6. Compare HTIB with other home systems
- \_\_\_\_\_ 7. Various designs used for speaker systems
- \_\_\_\_\_ 8. Diagram of surround sound theater design
- \_\_\_\_\_ 9. Demo speaker mounting locations
- \_\_\_\_\_ 10. Speaker damage from underpowered amp
- \_\_\_\_\_ 11. HDTV commercial broadcasting standards
- \_\_\_\_\_ 12. Features of flat-panel display technology
- \_\_\_\_\_ 13. Pros/Cons of current displays
- \_\_\_\_\_ 14. Active vs. passive-matrix flat-panel displays
- \_\_\_\_\_ 15. Interlaced & progressive scan modes
- \_\_\_\_\_ 16. Front vs. rear projection television
- \_\_\_\_\_ 17. Requirements for installing satellite dish
- \_\_\_\_\_ 18. Middleware connectivity applications
- \_\_\_\_\_ 19. Draw a 2-way & 3-way crossover network
- \_\_\_\_\_ 20. Home theater connectors & video formats
- \_\_\_\_\_ 21. Popular video and audio standard formats
- \_\_\_\_\_ 22. Display formats for connecting DVD to TV
- \_\_\_\_\_ 23. Audio/video room calibration
- \_\_\_\_\_ 24. Sources of audio and video services
- \_\_\_\_\_ 25. Review 3 receivers & connect components
- \_\_\_\_\_ 26. Demo listed system set-ups
- \_\_\_\_\_ 27. Demo theater system w/home automation
- \_\_\_\_\_ 28. Preventative maintenance techniques

## **F. EMPLOYABILITY SKILLS REVIEW** (5 hrs)

- \_\_\_\_\_ 1. Employer requirements in an employee
- \_\_\_\_\_ 2. Update potential employers in job search
- \_\_\_\_\_ 3. Electronic networking in the job search
- \_\_\_\_\_ 4. Sample resumes and cover letters
- \_\_\_\_\_ 5. Accurate/legible/complete job application
- \_\_\_\_\_ 6. Sample job application
- \_\_\_\_\_ 7. Enthusiasm for job
- \_\_\_\_\_ 8. Appropriate appearance on job
- \_\_\_\_\_ 9. Continuous upgrading of job skills
- \_\_\_\_\_ 10. Customer service to establish relationships
- \_\_\_\_\_ 11. Appropriate interview techniques
- \_\_\_\_\_ 12. Resources to use for successful interview
- \_\_\_\_\_ 13. Update follow-up letters
- \_\_\_\_\_ 14. Appropriate follow-up procedures