# Electrical & Security Systems Course No. 17113 Credit: 0.5

|  |  |  |  |
| --- | --- | --- | --- |
| **Student name:** |  | **Graduation Date:** |  |

Pathways and CIP Codes: **Construction & Design (46.0000) - Construction Strand**; Manufacturing (48.0000) - Maintenance Strand

Course Description: An **application level** course designed to provide students with the knowledge and skills needed to install, troubleshoot, and maintain electrical and security systems. (Prerequisite: 17002/Carpentry.)

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 0: The following competencies are to be taught within ALL application level courses offered in your school's approved pathway.

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 0.1 | Demonstrate an understanding of industry standards for personal safety including the safe use of tools, equipment, and hazardous materials. |  |
| 0.2 | Demonstrate time management skills. |  |
| 0.3 | Create and utilize employment documents including a resume and portfolio. |  |
| 0.4 | Demonstrate job seeking and interview skills. |  |
| 0.5 | Understand and respond to performance reviews. |  |

## Benchmark 1: Click or tap here to enter text.

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Cut, ream, thread, and bend conduit. |  |
| 1.2 | Compute branch circuit loads and explain installation requirements. |  |
| 1.3 | Demonstrate the procedure for safely using a clamp-on ammeter and a voltage tester. |  |
| 1.4 | Demonstrate procedures for installing raceways and boxes. |  |
| 1.5 | Demonstrate ability to correctly pull wire through conduit. |  |
| 1.6 | Select and install appropriate service entrance equipment according to codes. |  |
| 1.7 | Demonstrate the ability to properly ground electrical circuits according to codes. |  |
| 1.8 | Install breakers, plugs, and switches. |  |
| 1.9 | Explain basic characteristics of series and parallel circuits. |  |
| 1.10 | Recognize and install various types of lighting fixtures. |  |
| 1.11 | Describe characteristics and functions of various fire alarm systems. |  |
| 1.12 | Describe characteristics and functions of various security and burglar alarm systems. |  |
| 1.13 | Describe the uses, characteristics, and theory of low voltage systems. |  |
| 1.14 | Demonstrate knowledge of the uses and installation process for Closed Circuit TV. |  |
| 1.15 | Describe the components of and uses for electric lock hardware. |  |
| 1.16 | Demonstrate safe use of electric hand and power tools. |  |
| 1.17 | Understand and interact with LAN systems as a part of an overall security installation. |  |
| 1.18 | Demonstrate ability to install a lightning protection system. |  |
| 1.19 | Troubleshoot and repair problems in lighting fixtures, including ballast replacement. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

(785) 296-4908

[pathwayshelpdesk@ksde.org](mailto:pathwayshelpdesk@ksde.org)



900 S.W. Jackson Street, Suite 102

Topeka, Kansas 66612-1212

[https://www.ksde.org](https://www.ksde.org/)

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities and provides equal access to any group officially affiliated with the Boy Scouts of America and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 S.W. Jackson, Suite 102, Topeka, KS 66612, (785) 296-3201.