# Research and Design for Preconstruction Course No. 21109 Credit: 1.0

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

Pathways and CIP Codes:Construction & Design (46.0000) - Design Strand

Course Description: An advanced research and **application level** course covering specific topics in architecture that should provide work-based learning opportunities.

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: architectual research and application

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Work with a client to develop a client- driven product. |  |
| 1.2 | Produce a working model (graphic or physical) using advanced software and/or equipment. |  |
| 1.3 | Demonstrate ability to apply shading and rendering techniques to 3d surfaces and solid models. |  |
| 1.4 | Demonstrate ability to access and utilize industry resources. |  |
| 1.5 | Use appropriate grammar and word usage in the creation and implementation of a formal graphic presentation using current standards and technology. |  |
| 1.6 | Apply principles of dimensioning/tolerances, fasteners/hardware, and power transmission. |  |
| 1.7 | Apply basic principles ofenvironmental impact to enhance project acceptance and quality. |  |
| 1.8 | Demonstrate ability to apply design requirements for people needing special accommodations. |  |
| 1.9 | Utilize effective management techniques to organize work flow.  |  |
| 1.10 | Use technology and resources to research licensing certification and credentialing in architecture and construction management. |  |
| 1.11 | Conduct facility evaluations and critique their effectiveness. |  |
| 1.12 | Research new technologies to meet future client needs. |  |
| 1.13 | Demonstrate ability to access and utilize industry resources. |  |
| 1.14 | Demonstrate abilities in design/planning, visual communication and problem solving in current architectural practices. |  |
| 1.15 | Integrate alternative construction methods and materials in current architectural drawings. |  |
| 1.16 | Demonstrate ability to use CSI – Construction Specifications Institute’s Uniform Drawing System and Master Format. |  |
| 1.17 | Research various methods for obtaining financing for building projects. |  |
| 1.18 | Demonstrate ability to incorporate specific codes as given for a selected jurisdiction. |  |
| 1.19 | Demonstrate ability to set and work within defined budget. |  |
| 1.20 | Research and use information for product development |  |
| 1.21 | Manipulate materials and processes to meet client needs. |  |
| 1.22 | Demonstrate ability to manage and set project goals and timelines |  |

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



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.