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

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| **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 of environmental 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](mailto:pathwayshelpdesk@ksde.org)



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