# Common Career Technical Core Programming & Software Development Pathway

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

Course Description: To be taught in all courses in the approved pathway.

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 1: Career REady practices - [Career Ready Practices](https://careertech.org/wp-content/uploads/2024/10/Career-Ready-Practices.pdf)

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Lead as a contributing & professional employee |  |
| 1.2 | Communicate clearly, effectively, & with reason |  |
| 1.3 | Think critically to make sense of problems & persevere in solving them |  |
| 1.4 | Collaborate productively while using cultural & global competencies |  |
| 1.5 | Use digital skills & technologie to enchance productivitiy & make date-informed decisions |  |
| 1.6 | Remain resilient in a changing workplace & world of work |  |
| 1.7 | Manage time & space effectively |  |
| 1.8 | Demonstrate a creative & innovative mindset |  |
| 1.9 | Act as a good steward of organizational & personal finances & resources |  |
| 1.10 | Navigate an education & career path aligned to strengths, work style, interests, & goals |  |
| 1.11 | Consider the environmental & social impacts of decisions |  |
| 1.12 | Apply appropriate academic & technical skills |  |

## Benchmark 2: Information Technology Career Cluster

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Demonstrate effective professional communication skills and practices that enable positive customer relationships. |  |
| 2.2 | Use product or service design processes and guidelines to produce a quality information technology (IT) product or service. |  |
| 2.3 | Demonstrate the use of cross-functional teams in achieving IT project goals. |  |
| 2.4 | Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors. |  |
| 2.5 | Explain the implications of IT on business development. |  |
| 2.6 | Describe trends in emerging and evolving computer technologies and their influence on IT practices. |  |
| 2.7 | Perform standard computer backup and restore procedures to protect IT information. |  |
| 2.8 | Recognize and analyze potential IT security threats to develop and maintain security requirements. |  |
| 2.9 | Describe quality assurance practices and methods employed in producing and providing quality IT products and services. |  |
| 2.10 | Describe the use of computer forensics to prevent and solve information technology crimes and security breaches. |  |
| 2.11 | Demonstrate knowledge of the hardware components associated with information systems. |  |
| 2.12 | Demonstrate knowledge of the hardware components associated with information systems. |  |

## Benchmark 3: Programming & Software Development Career Pathways

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Analyze customer software needs and requirements. |  |
| 3.2 | Demonstrate the use of industry standard strategies and project planning to meet customer specifications. |  |
| 3.3 | Analyze system and software requirements to ensure maximum operating efficiency. |  |
| 3.4 | Demonstrate the effective use of software development tools to develop software applications. |  |
| 3.5 | Apply an appropriate software development process to design a software application. |  |
| 3.6 | Program a computer application using the appropriate programming language. |  |
| 3.7 | Demonstrate software testing procedures to ensure quality products. |  |
| 3.8 | Perform quality assurance tasks as part of the software development cycle. |  |
| 3.9 | Perform software maintenance and customer support functions. |  |
| 3.10 | Design, create and maintain a database. |  |

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.