# Common Career Technical Core Programming & Software Development Pathway

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| --- | --- | --- | --- |
| **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 Standards

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Act as a responsible and contributing citizen and employee. |  |
| 1.2 | Apply appropriate academic and technical skills. |  |
| 1.3 | Attend to personal health and financial well-being. |  |
| 1.4 | Communicate clearly, effectively and with reason. |  |
| 1.5 | Consider the environmental,social and economic impacts of decisions. |  |
| 1.6 | Demonstrate creativity and innovation. |  |
| 1.7 | Employ valid and reliable research strategies. |  |
| 1.8 | Utilize critical thinking to make sense of problems and persevere in solving them. |  |
| 1.9 | Model integrity, ethical leadership and effective management. |  |
| 1.10 | Plan education and career path aligned to personal goals. |  |
| 1.11 | Use technology to enhance productivity. |  |
| 1.12 | Work productively in teams while using cultural/global competence. |  |

## 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

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