# Common Career Technical Core Biochemistry 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: Health Science Career Cluster

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Determine academic subject matter, in addition to high school graduation requirements, necessary for pursuing a health science career. |  |
| 2.2 | Explain the healthcare worker's role within their department, their organization and the overall healthcare system. |  |
| 2.3 | Identify existing and potential hazards to clients, co-workers, visitors and self in the healthcare workplace. |  |
| 2.4 | Evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care. |  |
| 2.5 | Analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace. |  |
| 2.6 | Evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace. |  |

## Benchmark 3: Biotechnology Research & Development Career Pathway

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Summarize the goals of biotechnology research and development within legal and ethical protocols. |  |
| 3.2 | Apply the fundamentals of biochemistry, cell biology, genetics, mathematical concepts, microbiology, molecular biology, organic chemistry and statistics to conduct effective biotechnology research and development of products. |  |
| 3.3 | Demonstrate basic knowledge of recombinant DNA, genetic engineering, bioprocessing, monoclonal antibody production, nanotechnology, bioinformatics, genomics, proteomics and transcriptomics to conduct biotechnology research and development. |  |
| 3.4 | Demonstrate the principles of solution preparation, sterile techniques, contamination control and measurement and calibration of instruments used in biotechnology research. |  |
| 3.5 | Determine processes for product design and production and how that work contributes to an understanding of the biotechnology product development process. |  |
| 3.6 | Summarize and explain the larger ethical, moral and legal issues related to biotechnology research, product development and use in society. |  |

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



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