



HEALTH AND BIO SCIENCES CAREER CLUSTER DESIGN

Biochemistry Pathway

CIP CODE 14.1401

APPROVED PATHWAY:

1. Includes a minimum of three secondary-level credits.
2. Includes a work-based element.
3. Consist of a sequence:
 - Introductory-level course.
 - Technical-level course.
 - Application-level course.
4. Supporting documentation includes:
 - Articulation Agreement(s).
 - Certification.
 - Program Improvement Plan.
 - Program of Study.
5. Technical-level and Application-level courses receive .5 state weighted funding in an approved CTE pathway.

INTRODUCTORY LEVEL

Title	Code	Credit
Environmental Science	03003	1
Chemistry	03101	1
Computing Systems (8-9)	10002/60002	1
Computer Applications (8-9)	10004/60004	1

TECHNICAL LEVEL

Title	Code	Credit
Biotechnology in Agriculture	18308	1
* Anatomy and Physiology	03053	1
AP Environmental Science	03207	1
Pharmacology	14253	1
Applied Biochemistry	03203	1
Plant and Soil Science	18058	1

APPLICATION LEVEL

Title	Code	Credit
Natural Resources Management	18504	1
● Bioengineering	21020	1
● Biotechnical Engineering	21014	1
Environmental Resources and Wildlife Science	37506	1
Emerging Technologies	21053	1
Biochemistry Workplace Experience	21048	1
Applications in Biotechnology in Agriculture	18320	1

- * Required course for pathway approval.
- Must choose **ONE** of these Application Level courses for pathway approval.

Pre – Committee Review



HEALTH AND BIO SCIENCES CAREER CLUSTER DESIGN

Biomedical Pathway

CIP CODE 14.0501

APPROVED PATHWAY:

1. Includes a minimum of three secondary-level credits.
2. Includes a work-based element.
3. Consist of a sequence:
 - Introductory-level course.
 - Technical-level course.
 - Application-level course.
4. Supporting documentation includes:
 - Articulation Agreement(s).
 - Certification.
 - Program Improvement Plan.
 - Program of Study.
5. Technical-level and Application-level courses receive .5 state weighted funding in an approved CTE pathway.

INTRODUCTORY LEVEL

Title	Code	Credit
Biology	03051/03052	1
Chemistry	03101	1
Computing Systems (8-9)	10002/60002	1
Computer Applications (8-9)	10004/60004	1

TECHNICAL LEVEL

Title	Code	Credit
Principles of Biomedical Science	14251	1
Medical Interventions	14105	1
* Human Body Systems	14102	1
* Anatomy and Physiology	03053	1
Robotics	21009	1
Pharmacology	14253	1
Food Science	19254	1
Agricultural Food Science	18305	1
AP Biology	03056	1

APPLICATION LEVEL

Title	Code	Credit
Biomedical Innovation	14255	1
● Bioengineering	21020	1
● Biotechnical Engineering	21014	1
Emerging Technologies	21053	1
Particular Topics in Engineering	21015	1
Biomedical Workplace Experience	14998	1

* Required course for pathway approval.

● Must choose **ONE** of these Application Level courses for pathway approval.

Pre – Committee Review



HEALTH AND BIO SCIENCES CAREER CLUSTER DESIGN

Biotechnology Pathway

CIP CODE 26.1201

Post – Committee Review

1. Includes a minimum of three secondary-level credits.
2. Includes a work-based element.
3. Consist of a sequence:
 - Introductory-level course.
 - Technical-level course.
 - Application-level course.
4. Supporting documentation includes:
 - Articulation Agreement(s).
 - Certification.
 - Program Improvement Plan.
 - Program of Study.
5. Technical-level and Application-level courses receive .5 state weighted funding in an approved CTE pathway.

INTRODUCTORY LEVEL

Title	Code	Credit
Chemistry	03101	1
Computer Applications (8-9)	10004/60004	.5
Computing Systems (8-9)	10002/60002	1

TECHNICAL LEVEL

Title	Code	Credit
Anatomy and Physiology	03053	1
Pharmacology	14253	1
Human Body Systems	14102	1
* Biotechnology Essentials	21014	1

APPLICATION LEVEL

Title	Code	Credit
Bioscience Workplace Experience	14998	1
Applied Biotechnology	18320	1

BIOMEDICAL STRAND

Title	Code	Credit
Principles of Biomedical Science	14251	1
Medical Interventions	14105	1
Robotics	21009	1

BIOMEDICAL STRAND

Title	Code	Credit
Biomedical Innovation	10165	1
Emerging Technologies	31096	1

BIOCHEMICAL STRAND

Title	Code	Credit
Applied Biochemistry	10202	1
Food Science	10210	1
Plant and Food Science	30105	1

BIOCHEMICAL STRAND

Title	Code	Credit
Particular Topics of Engineering	21015	1

* Required course for pathway approval.

Pathway Recommendations Summary:

Layout Summary:

The Biomedical pathway and Biochemistry pathway merged to form a single pathway called Biotechnology.

Between the biomedical and biochemistry pathways there were 8 shared courses. Biomedical and Biochemistry are now concentrated as strands within the pathway called Biotechnology with a few additional course added from the Biotechnology in Agriculture pathway. The star for the pathway required course was removed from Anatomy and Physiology and applied to the course Biotechnology Essentials.

CIP Change:

The CIP code recommended for Biotechnology is 26.1201: A program that focuses on the application of the biological sciences, biochemistry, and genetics to the preparation of new and enhanced agricultural, environmental, clinical, and industrial products.

Pathway Recommendations Summary:

Courses with no recommend changes: [CTE Course Competencies and Indicators \(ksde.org\)](https://ksde.org)

- 03101 Chemistry
- 10002/60002 Computing Systems
- 14251 Principles of Biomedical Science
- 14105 Medical Interventions
- 03203 Applied Biochemistry
- 19254 Food Science

Courses not reviewed by this committee:

- 18058 Plant and Soil
- 21053 Emerging Technologies
- 21015 Particular Topics in Engineering
- 21009 Robotics
- 10004/60004 Computer Applications

Courses reviewed with recommended changes:

- 03053 Anatomy and Physiology
- 14253 Pharmacology
- 14102 Human Body Systems
- 21014 Biotechnology Essentials
- 14998 Bioscience Workplace Experience
- 18320 Applied Biotechnology, rename from Applications in Agricultural Biotechnology
- 14255 Biomedical Innovation

Courses removed from the pathway:

- 03051 Biology
- 03052 AP Biology