Maryland CTE Program of Study

**Program of Study –Biomedical Sciences (PLTW)**

Maryland State Department of Education

Division of Career and College Readiness

200 West Baltimore Street

Baltimore, Maryland 21201-2595

This agreement is between the Division of Career and College Readiness (DCCR), Maryland State Department of Education, and the local school system listed below.

**LOCAL SCHOOL SYSTEM INFORMATION –** Complete the information requested below, including the original signature of the CTE local director.

|  |  |
| --- | --- |
| Local School System (LSS) and Code: |  |
| Name of CTE local director: |  | Phone: |  |
| LSS Career Cluster: |  |
| LSS Program Title: | **Biomedical Sciences Program (Project Lead The Way – PLTW)** |
| Pathway Options: | **1.Biomedical Sciences** | 2. | 3. |
| Program Start Date: |  |  |  |
| Signature of CTE Local Director: |  | Date: |  |
| Signature of Local Superintendent: |  | Date: |  |

**TO BE COMPLETED BY MSDE/DCTAL**

|  |  |
| --- | --- |
| Date Program Proposal received by CTE Systems Branch: |  |
| CTE Control Number: |  | Fiscal Year: |  |
| CIP Number: |  Program ***51.1150***  | Pathway Option 1:  | PathwayOption 2:  | PathwayOption 3: |
| MSDE Cluster Title: | **Health and Biosciences** |

|  |  |  |
| --- | --- | --- |
| **Approval Starts FY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |  |
|  |  |  |
| Signature, Assistant State Superintendent, Career Technology & Adult Learning |  | Date |

 **CTE Secondary Program Proposal Contents**

**STEP 1A: PROGRAM ADVISORY COMMITTEE MEMBERS AND THEIR AFFILIATIONS**

Complete the list of the Program Advisory Committee (PAC) members. Members should include employers, local workforce development representatives, economic development personnel, business, or labor representatives, and the remainder should include secondary and postsecondary, academic and technical educators and other stakeholders. Place a check in the appropriate box to indicate the role each person plays. Include all of the information requested for each entry. Use this form or a locally developed form – either one is acceptable as long as all information is provided.

# Program Advisory Committee List

|  |
| --- |
| **Membership: First entry should be the industry representative who is leading the PAC.** |
| PAC Leader Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |

|  |  |  |
| --- | --- | --- |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |

STEP 1B: DOCUMENTED LABOR MARKET DEMAND – Check the appropriate box below.

[x]  Demand exists

The PAC will review labor market information on a local, regional and/or state basis. Check this box if demand exists for the identified occupations. The labor market information does not need to be provided with the proposal as long as there is a demand for employees according to data provided by the Department of Labor, Licensing and Regulation (DLLR) or documented by employers in letters or other correspondence.

[ ]  If evidence for labor market demand is not readily available, attach documentation to the proposal.

Check this box if there is a unique labor market demand for a program and data are not available from the Department of Labor, Licensing and Regulation (DLLR). If the occupation is new or emerging and no data exist, supporting evidence is submitted with the proposal (i.e. document local, national, or regional trends, local circumstances, or provide letters from employers or local economic/workforce development offices documenting employment demand including the projected number of openings by pathway).

**STEP 2A: PROGRAM OVERVIEW** – After determining the cluster and pathway options, identify the standards used to develop the CTE program of study. Describe the program to be developed in detail based on what students are expected to know and be able to demonstrate as a result of participating in the program.

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| **Indicate the title and source of the skills standards for this program:** The National Academy of Sciences; The National Council of Teachers of Mathematics; The National Council of Teachersof English; and the Accountability Criteria for National Health Care Cluster Foundation Standards**Program Overview:**The Biomedical Sciences Program is based on the National Standards for Science, Mathematics, and English Language Arts, and the Accountability Criteria for National Health Care Cluster Foundation Standards. The program consists of a sequence of four courses: Principles of the Biomedical Sciences, Human Body Systems, Medical Interventions, and Biomedical Innovation. The goal of the program is to increase the number of students pursuing careers in the biomedical sciences, including healthcare. Students who complete the program are prepared for employment and further education at two- and four- year college levels.Stevenson University, the Maryland PLTW Biomedical Sciences Affiliate University, will offer transcripted credit (3 credits in BIO 113 General Biology I: Cell Biology and Genetics and 1 credit in BIO 113L: General Biology I Laboratory: Cell Biology and Genetics) to students who:* Complete all four (4) courses in the PLTW Biomedical Sciences program at a PLTW certified high school.
* Earn a GPA of 3.0 or higher in all PLTW Biomedical Sciences courses, with no more than one grade of “C” in a PLTW course.
* Earn a score of 7 or higher on the end of course exams for the Principles of the Biomedical Sciences, Human Body Systems and Medical Interventions courses.

At the conclusion of the program students will be able to:* Discuss the education requirements and job responsibilities of multiple careers in the Biomedical Sciences including biotechnology, bioengineering, and healthcare.
* Conduct research using valid sources from the Internet or Library.
* Design and conduct well-controlled scientific experiments.
* Analyze and effectively present data from experiments.
* Write lab reports, research summaries, and modify grant proposals.
* Present information effectively in writing, orally, and using multimedia.
* Work as a member of a team.
* Explain how the human body is a system, consisting of the interconnections of multiple smaller systems including cardiovascular, muscular-skeletal, nervous, digestive, endocrine, immune, and reproductive.
* Explain how DNA codes for proteins and how proteins are produced.
* Build models of multiple types of biological macromolecules, including carbohydrates, proteins, lipids, and nucleic acids, and explain their functions in the body.
* Analyze the relationship between food and energy.
* Discuss how feedback mechanisms and multiple communication methods are used by the cells of the human body.
* Explain why different treatment options or medical interventions are necessary for different types of diseases or medical conditions.
* Describe a variety of medical interventions that prolong life including procedures for the diagnosis, treatment, and prevention of diseases or medical conditions.
* Discuss how societal attitudes affect the development and use of medical interventions.
 |

**STEP 2B: COURSE DESCRIPTIONS AND END OF COURSE ASSESSMENTS** – Insert each CTE completer course title. Describe each course based on what students are expected to know and be able to demonstrate as a result of their participation. Check the assessment instrument(s) that will be used to document student attainment of the knowledge and skills included in each course and specify additional information as appropriate.

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| --- |
| **Course Title: Principles of the Biomedical Sciences™** **Course Description:** Students investigate the human body systems and various health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. They determine the factors that led to the death of a fictional person, and investigate lifestyle choices and medical treatments that may have prolonged the person’s life. The activities and projects introduce students to human physiology, medicine, research processes and bioinformatics. This course is designed to provide an overview of all the courses in the Biomedical Sciences program and lay the scientific foundation for subsequent courses. In Principles of the Biomedical Sciences students will:* Investigate the human circulatory, respiratory, digestive, excretory, nervous, and skeletal systems.
* Build a pump and investigate factors that affect pump efficiency.
* Compare a mechanical pump to a four-chambered heart.
* Monitor heart function through the use of data acquisition software.
* Investigate the role of enzymes in biochemical reactions.
* Build models of macromolecules including carbohydrates, proteins, lipids, and DNA.
* Analyze positive and negative feedback systems.
* Make chromosome spreads and karyotypes.
* Isolate DNA from plant cells.
* Read genetic maps and build models of specific proteins.
* Design a protein with specific characteristics by using computer simulation software.
* Examine differences in DNA sequences through the use of DNA electrophoresis.
* Perform Gram stain analyses of bacteria.
* Build models of viruses.
* Create a public health campaign to inform other students about an infectious disease by working as a member of a team.
* Examine various medical interventions used to prolong life.
* Work on a team to write and present a grant proposal for an intervention to prevent or lessen the effect of a health condition, syndrome, or disease.

**End of Course Assessment**Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.[ ]  Teacher-designed end-of-course assessment☒ Partner-developed exam: PBS end-of-course assessment  |
| **Course Title: Human Body Systems™****Course Description:** Students examine the interactions of body systems as they explore identity, communication, power, movement, protection, and homeostasis. Students design experiments, investigate the structures and functions of the human body, and use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary actions, and respiration. Exploring science in action, students build organs and tissues on a skeletal manikin, work through interesting real world cases and often play the role of biomedical professionals to solve medical mysteries.In Human Body Systems students will:* Investigate how a body is identified through the analysis of bone structure and DNA.
* Compare the response times of voluntary and reflex actions using data acquisition software.
* Build an electrical circuit to simulate nervous impulses moving through the body.
* Dissect a sheep’s brain and map key regions that control body functions such as coordination and reasoning.
* Analyze the role the respiratory, cardiovascular, digestive and excretory systems play in converting the body’s fuel into usable energy.
* Investigate muscle structure and function by building models.
* Build a working model of a joint.
* Design experiments to investigate intercellular communication.
* Explore how the skin, bones, blood, and liver work together to protect the body from invaders and toxins.

**End of Course Assessment**Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.[ ]  Teacher-designed end-of-course assessment☒ Partner-developed exam: HBS end-of-course assessment  |
| **Course Title: Medical Interventions**™**Course Description:** Students investigate the variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. The course is a “How-To” manual for maintaining overall health and homeostasis in the body as students explore: how to prevent and fight infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. Through these scenarios, students are exposed to the wide range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics. Lifestyle choices and preventative measures are emphasized throughout the course as well as the important roles scientific thinking and engineering design play in the development of interventions of the future.In Medical Interventions students will:* Research the history of medical interventions.
* Investigate the role diagnostic tests and procedures play in the prevention of disease and the preservation of life.
* Investigate how pharmaceuticals are identified, tested, and made available to patients.
* Examine the use of antibiotics and the development of antibiotic resistance.
* Research the risks, benefits, and history of vaccination.
* Explore the link between technological advances and improved medical interventions.
* Build a prosthetic device.
* Measure hearing and examine hearing aid and cochlear implant technology.
* Perform experiments on gene transfer using bacteria.
* Investigate the immunological testing required for organ transplant.
* Research interventions in the field of reproductive medicine
* Review current literature and case studies on the development of new medical interventions.
* Explore the impact of societal attitudes on the development and acceptance of medical interventions.
* Write a report on the ethics of using a controversial medical intervention.

**End of Course Assessment**Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.[ ]  Teacher-designed end-of-course assessment☒ Partner-developed exam: MI end-of-course assessment  |
| **Course Title: Biomedical Innovation**™**Course Description:** In this capstone course, students apply their knowledge and skills to answer questions to solve problems related to the biomedical sciences. Students design innovative solutions for the health challenges of the 21st century as they work through progressively challenging open-ended problems, addressing topics such as clinical medicine, physiology, biomedical engineering, and public health. They have the opportunity to work on an independent project and may work with a mentor or advisor from a university, hospital, physician’s office, or industry. Throughout the course students are expected to present their work to an adult audience that may include representatives from the local business and health care community.In Biomedical Innovations students will:* Identify a research topic or problem.
* Complete a review of the available literature regarding the research topic or problem.
* Write a research proposal.
* Explore various research methods and laboratory techniques.
* Conduct independent research with the guidance of a mentor from a scientific or medical institution or company.
* Analyze the data collected from the research.
* Write a formal report of the research methods, results, and conclusions.
* Present the research results to professionals from the scientific or medical community.mso1DB

**End of Course Assessment**Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.[x]  Teacher-designed end-of-course assessment[ ]  Partner-developed exam:  |

STEP 2C: END-OF-PROGRAM ASSESSMENT - Check the assessment instruments that will be used to document student attainment of the program knowledge and skills. Include and identify assessments leading to industry recognized credentials if available and appropriate.

[ ]  Teacher-designed end-of-program assessment

[ ]  School system-designed end-of-program assessment

[ ]  Partner-developed exam: (specify)

[ ]  Licensing exam: (specify)

[ ]  Certification or credentialing exam: (specify)

[ ]  Nationally recognized examination: (specify)

**STEP 2D: Program Sequence Matrix** (Include the program sequences for High School, Associate’s Degree, and Bachelor’s Degree programs)

Identify the pathway options. Complete the program matrix for the 9-12 program. Include the matrix for the two- or four-year college program of study. Indicate which courses receive CTE credit by placing the number of credits in parentheses after each CTE course title. Place an asterisk (\*) next to the course identified as the concentrator course indicating that the student has completed 50% of the program.

The program matrix defines a planned, sequential program of study that consists of a minimum of four credits in CTE coursework including work-based learning and/or industry-mentored projects. Work-based learning experiences or industry-mentored projects must be included in the program to obtain approval. The program matrix includes the recommended academic and CTE courses identified for the pathway and postsecondary linkages (i.e., dual enrollment, Tech Prep, transcripted and articulated credit).

CTE programs typically begin after ninth grade and do not include career exploration courses. Courses such as computer applications and keyboarding are not included in the completer sequence because they provide prerequisite skills for both academic courses and CTE programs. Academic courses are counted only if they are tailored to serve mainly CTE students and have been revised to reflect industry skill standards. Technology Education or Advanced Technology Education courses are not acceptable for credit in the career and technology education program sequence.

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| **The LSS program title should be the same one that appears on the cover page. If more than one pathway option is offered in the program, complete a matrix for each program option (MSDE will insert the CIP number). Example: An Academy of Information Technology program may include options in web design & programming.** |
| **Pathway/Program:** | **Biomedical Sciences** | **CIP Number (For MSDE Use)** | **51.1150** |
| **Graduation Requirements** | **Grade 9** | **Grade 10** | **Grade 11** | **Grade 12** |
| English - 4 | English 9 | English 10 | English 11 | English 12 |
| Social Studies - 3 | US Government | World History | US History | Government and Economics |
| Mathematics - 3  | Algebra 1 | Geometry | Algebra 2 | Trigonometry or Pre-Calculus |
| Science - 3 | Physical Science | Biology | Chemistry | Physics or an AP Science  |
| Physical Education -.5Health Education - .5 | .5 PE | .5 Health |  |  |
| Fine Arts - 1 | .5 Fine Arts | .5 Fine Arts |  |  |
| Technology Education - 1 | Tech Ed |  |  |  |
| CTE Completer Program – 4 \*concentrator course | *Principles of the Biomedical Sciences* (1) | *Human Body Systems (1)* | *\*Medical Interventions (1)* | *Biomedical Innovation (1)*  |
| Foreign Language - 2 and/orAdvanced Tech Ed - 2 | Foreign Language | Foreign Language |  |  |
| **Provide a list of examples of careers students are preparing to enter and postsecondary options:** Doctor, Nurse, Dentist, Veterinarian, Veterinarian Assistant, Pharmacist, Research Scientist, Biomedical Engineer, Dietician, Paramedic, Health Information Manager, Medical Technologist, Radiologist, Medical Technical WriterPhysician Assistant, Medical Assistant, Biotechnology/Biomanufacturing Lab Technician, |

|  |
| --- |
| **Two Year College Program Sequence – Program Overview****Many local school systems provide postsecondary matrices in their program of study guides to inform students, parents, and counselors of the opportunities available to those enrolled in the program.****Describe the program to be developed in detail based on what students are expected to know and be able to demonstrate as a result of participating in the program.** |
| **Program Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****College/Institution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Recommended Sequence – Complete the program matrix for the postsecondary sequence for the Tech Prep program of study. Indicate which courses receive articulated or transcripted credit by PLACING THE NUMBER OF CREDITS IN PARENTHESES after each course title.**  |
| **Semester 1** | **Semester 2** |
|  |  |
| **Semester 3** | **Semester 4** |
|  |  |
| **Provide a list of career options for students who complete the program:**  |

|  |
| --- |
| **Four Year College Program Sequence****Program Overview Complete this matrix if the program includes a four year degree option.****Many local school systems provide postsecondary matrices in their program of study guides to inform students, parents, and counselors of the opportunities available to those enrolled in the program. Section 2E must be completed before a program is identified as Tech Prep. *A copy of the Tech Prep Articulation Agreement is required to be submitted with the proposal prior to program approval.*****Describe the program to be developed in detail based on what students are expected to know and be able to demonstrate as a result of participating in the program.** |
| **Program Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****College/Institution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Recommended Sequence – Complete the program matrix for the postsecondary sequence for the Tech Prep program of study. Indicate which courses receive articulated or transcripted credit by PLACING THE NUMBER OF CREDITS IN PARENTHESES after each course title.**  |
| **Semester 1** | **Semester 2** |
|  |  |
| **Semester 3** | **Semester 4** |
|  |  |
| **Provide a list of career options for students who complete the program:**  |

**STEP 2E: VALUE-ADDED OPTIONS** – Fill in the name of the partnering college or agency. Specify the credential that students will earn. Under value-added, indicate the number of credits or hours granted. This information is required before a program can be designated as Tech Prep.

|  |  |  |  |
| --- | --- | --- | --- |
| **Option** | **Partner** | **Credential** | **Value added for CTE completers** |
| Dual Enrollment |  |  |  |
| Transcripted Credit | Stevenson University  – Biomedical Sciences (PLTW) University Affiliate |  | BIO 113 General Biology I: Cell Biology and Genetics (3 credits) BIO 113L : General Biology I Laboratory: Cell Biology and Genetics (1 credit) |
| Articulated Credit |   |  |  |
| Credit by Exam |  |  |  |
| Advanced Placement |  |  |  |
| Apprenticeship Approved by MATC\* |  |  |  |
| Certification(s) |  |  |  |
| License |  |  |  |
| Degree |  |  |  |
| Other (specify) |  |  |  |

\*MD Apprenticeship and Training Council

**STEP 2F: INDUSTRY-MENTORED PROJECT OR WORK-BASED LEARNING OPPORTUNITIES**Check each box that applies.

PAC members and other industry partners provide supervised (WBL) experiences and/or industry-mentored projects for all students who demonstrate performance of the competencies necessary to enter into this phase of the program. Supervised work-based learning experiences are required for all students demonstrating readiness to participate. For the few who do not participate, alternative capstone experiences should be provided (i.e., in school work experiences, a culminating project, or another experience comparable in rigor). Each type of work-based learning is defined in the glossary. Job shadowing is **not** acceptable for credit in a CTE program.

1. [ ]  Integrated WBL 2. [ ]  Capstone WBL 3. [ ]  Registered Apprenticeship
4. [ ]  Internship 5. [x]  Industry-Mentored Project 6. [ ]  In-school clinic or school-based enterprise

**STEP 2G: STUDENT ORGANIZATIONS PROVIDED TO STUDENTS IN THE PROGRAM**

Check each box that applies or specify if “Other” is selected.

Students will develop and apply technical and academic skills, as well as Skills for Success, through participation in:

[ ]  DECA [ ]  FFA [x]  SkillsUSA [ ]  FBLA [ ]  OTHER (specify)

STEP 3: COMPLETE THE INSTRUCTIONAL PROGRAM DATA SHEET

|  |  |
| --- | --- |
| Local School System (LSS) and Code: |  |
| Name of CTE local director: |  | Phone: |  |
| LSS Program Title: | **Biomedical Sciences Program (Project Lead The Way)**  | CIP Code: | **51.1150** |

*DATA SHEET - Pathway Options*

|  |  |
| --- | --- |
| **1.** | **Biomedical Sciences** |
| **2.** |  |
| **3.** |  |
| **4.** |  |

*DATA SHEET - INSTRUCTIONAL PROGRAM CREDIT BY GRADE(S)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Credits per year per pathway option as reflected by Course Sequences** | **9** | **10** | **11** | **12** | **TOTAL** |
| 1. **Biomedical Sciences**
 | **1** | **1** | **1** | **1** | **4** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
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**Total number of credits for program completion:**

*DATA SHEET - CAREER AND TECHNOLOGY EDUCATION PROGRAM SITES*

|  |  |  |
| --- | --- | --- |
| **Pathway Options** | **School Name(s) Sites** | **School Number** |
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