

# Policies & Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study



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Maryland State Department of Education  
Division of Career and College Readiness  
Revised and Effective March 2022

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## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

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**Policies and Procedures for the Development & Continuous Improvement of  
Career and Technical Education Programs of Study**

**TABLE OF CONTENTS**

Introduction ..... 1

CTE Vision, Mission, and Principles..... 3

Local School System Process for Developing New CTE Programs..... 7

Directions for Completing the New Program Proposal for Submission to MSDE/DCCR ..... 17

New Local Secondary CTE Program of Study Form..... 18

Program Advisory Committee List..... 19

Example..... 30

Process for Amending Approved CTE Programs of Study..... 34

Amended Approved CTE Programs of Study Program Proposal Form ..... 35

Appendix A: DCCR Career P ..... 42

Appendix B: CTE Cluster Teams..... 43

Appendix C: Proposal Feedback Process ..... 44

Appendix D: Maryland CTE Programs of Study..... 45

Criteria ..... 46

Glossary..... 48

## Introduction

### Background – A Revised Model for Career and Technical Education

The vision for career and technical education (CTE) in Maryland is for each student to have access and opportunity to engage in career programs of study that:

- ✓ Align to high-skill, high-wage, or in-demand careers;
- ✓ Lead to earning industry-recognized and/or postsecondary credentials that will allow entrance or advancement in a specific career cluster; and
- ✓ Provide career-based learning experiences that require the application of academic and technical knowledge and skills in a work setting.

The Policies and Procedures document outlines the process that local school systems must use to implement industry-approved CTE programs into a student's route to high school graduation. All CTE programs of study are reviewed and approved by a team of representatives from industry, secondary, and postsecondary institutions to ensure alignment to standards and workforce needs.

Workforce development in Maryland represents a continuum of career awareness, exploration, preparation, and career seeking and advancement. Workforce development starts as early as elementary school and continues through secondary, postsecondary, and adult education. Every two years, the Maryland Department of Labor releases [Maryland Occupational Projections](#). The MSDE regularly reviews occupational projections to ensure that Maryland CTE career clusters are in alignment with workforce needs in Maryland. There are currently ten career clusters and two work-based learning CTE programs in Maryland. The work-based learning CTE programs cut across all ten clusters.

#### Career Clusters

1. Arts, Media, and Communications
2. Business Management and Finance
3. Construction and Development
4. Consumer Services, Hospitality, and Tourism
5. Environmental, Agriculture, and Natural Resources
6. Health and Bioscience
7. Human Resource Services
8. Information Technology
9. Manufacturing, Engineering and Technology
10. Transportation Technologies

#### Work-based Learning

1. Career Research and Development
2. Apprenticeship Maryland

Each [career cluster](#) has CTE programs of study containing content aligned to academic standards, industry standards, and employability skills. CTE programs of study provide the opportunity for students to engage in workplace learning experiences and earn postsecondary and/or industry-recognized credentials. Each program of study also provides the opportunity for students to participate in [Career and Technical Student Organizations](#) (CTSOs). CTSOs are co-curricular learning experiences that extend course instructional content by engaging students in hands-on learning experience connected to CTE programs of study.

## Overview – A Revised Process for Developing, Monitoring and Continuously Improving CTE Programs of Study

CTE programs of study must align to the vision for CTE. To ensure that all state approved programs align with this vision, the following policies and procedures have been established:

- a. Local school systems (LSSs) shall adopt Maryland CTE Programs of Study aligned to a career cluster. LSSs must complete specific local information on the proposal provided by MSDE. A current list of Maryland’s CTE Programs of Study and sample proposals are available at [Maryland Public Schools](#). If the PROGRAMS OF STUDY replace an existing local program, the local PROGRAMS OF STUDY will remain on the state approved list only until the students in the pipeline complete the program (maximum of two to four years).
- b. When a state program does not exist, CTE Local Directors develop new programs in collaboration with MSDE’s career cluster teams and other local school systems. All **new** program proposals are developed following the process outlined in this document. This process includes a requirement that stakeholders develop a plan for the continuous improvement of each program. During the program development process or once the proposal is approved by MSDE/DCCR, other school systems may adopt the program for local implementation.
- b. All existing programs undergo an **annual** review for continuous improvement opportunities as CTE Local Directors develop or update the Local CTE Perkins Application. The basis for such a review involves an examination of program performance data from the Program Quality Index (PQI) and other data available at the local level. Using performance data, the CTE Local Director identifies and prioritizes programs for review and revision in the Local CTE Perkins Application.
- c. If Local CTE Directors determine to reinstate a program that they or a predecessor removed from their school systems List of Approved CTE Programs (List A), they must submit a new program proposal to MSDE for review and approval. The program will follow the review process as outlined in this document—see page 14.
- d. In order to continue to receive federal funding, local school systems shall meet reporting requirements for the submission of data, local plans, and mid-year and final program and financial reports. If deadlines are missed, funds will be held by MSDE until the missing information is submitted.

This document describes the process that local school systems shall follow to develop or amend a CTE program that will provide students with a focused route to graduation, further education, and employment.

- Includes the mission and guiding principles that underpin the collaborative process for the development of CTE programs.
- Defines the process for program development and review, and
- Includes the directions for completing a program proposal to submit to DCCR for approval.

In order to begin the program proposal development process, CTE Local Directors consult with the appropriate DCCR Career Programs and Grants Specialist listed in Appendix A.

## CTE Vision, Mission, and Principles

A design team consisting of state and local stakeholders developed the vision, mission, and guiding principles for CTE programs in Maryland. These statements are the common understandings and agreements among the stakeholders regarding high-quality CTE. They are to be used to guide the development and/or improvement of CTE programs of study.

### Vision for Career and Technical Education in Maryland

Each student has access and the opportunity to engage in career programs of study that:

-  align to high-skill, high-wage, or in-demand careers;
-  lead to earning industry-recognized and/or postsecondary credentials that will allow entrance or advancement in a specific career cluster; and
-  provide career-based learning experiences that require the application of academic and technical knowledge and skills in a work setting.



 Division of Career and College Readiness

### Mission

Career and Technical Education programs are developed and implemented to increase the academic, career, and technical skills of students in order to prepare them for careers and further education.

In order to fulfill this mission, the following standards guide state-approved program development (13A.04.02.03 Career and Technical Education Development Standards). CTE programs shall be:

- 1) Developed by the Maryland State Department of Education and/or local school system and implemented to increase the academic, career, and technical skills of students in order to prepare them for careers and further education.**

CTE programs are based on current industry and academic standards. The program advisory committee (PAC) validates the most current technical standards and adopts or adapts those appropriate for the needs of the program. Where no appropriate standards exist, the PAC, in conjunction with the local school system, outlines standards to define the

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

academic, career, and technical skills required for completion of the program. The academic standards are based on Maryland's state standards.

### **2) Developed in conjunction with all relevant stakeholder groups, including industry and postsecondary partners.**

Each local school system works closely with a CTE local advisory council (LAC) on an ongoing basis to improve the local system of career and technical education. PACs exist for each program or cluster of closely related programs within the LSS. The PAC members work directly with CTE Local Directors and teachers at each school to provide advice on program enhancements. These committees involve parents, students, teachers, postsecondary partners, and representatives of business and industry, labor organizations, partners in local workforce and economic development, and representatives of special populations. Responsibilities include the development, implementation, and evaluation of high-quality CTE programs.

### **3) Organized under broad clusters, based on all aspects of an industry and designed to help students make informed decisions regarding career programs.**

Broad career clusters share a common core of knowledge and skills that provide students with an understanding of all aspects of the industry that they are planning to enter. For each cluster, these include planning, management, finances, technical and production skills, underlying principles of technology, labor issues, and health and safety. Learning and instruction are supported by appropriate career development activities aligned with the Maryland Career Development Framework to help inform students' decisions and prepare them for lifelong learning.

### **4) Developed to include opportunities for students to earn industry or postsecondary credentials and participate in work-based learning experiences**

The program advisory committee gathers labor market information at the local, regional, state, and national levels to ensure that CTE programs are developed to address the economic and workforce development needs of the state and align to high-skill, high-wage, or in-demand careers. This includes identifying the entry requirements and postsecondary credentials needed for the field as well as the work-based learning opportunities for students and ensuring that they are incorporated into program implementation—giving students a competitive advantage for entry into their chosen career. New or emerging programs offered at the postsecondary level must also be considered in order to provide secondary school students with the opportunity to link high school learning opportunities with college.

### **5) Developed to prepare students for both college and careers through the completion of a planned sequential program of study that blends academic, technical, and workplace skills.**

Students enrolled in CTE complete a planned, sequential program of study that blends academic, technical, and workplace skills. Dual completers, those who complete both a CTE approved program of study and meet the University System of Maryland's (USM's) course admissions requirements, graduate prepared for both college and careers. CTE program completers have the advantage of graduating from high school with expanded career options, industry-recognized credentials and/or early college credit.

**6) Developed to include a coherent set of academic, employability and technical skills, based on national and state standards that provide students moving directly to employment with a competitive advantage.**

CTE programs provide students with opportunities to earn industry-recognized credentials and/or early college credit. CTE students complete rigorous end-of-program assessments combining academic and technical skills. Where recognized national, state, or local certification or licensure assessments exist, they are offered to students. Where certification examinations do not exist, local school systems work with their local advisory councils and program advisory committees to identify appropriate assessments.

End-of-program assessments inform teachers of students' achievement and provide evidence for changes needed in the instructional program. To ensure that all students have the opportunity to attain the necessary knowledge and skills, accommodations and support services for members of special populations are identified and provided in all CTE programs.

CTE students attain *21st Century Skills* as represented by students successfully transitioning into employment, further education, or both. To fulfill this principle, programs include technical skill development and leadership experiences for students through Career and Technical Student Organizations (CTSOs) or other appropriate professional student organizations. Many students participate in competitions or mentored projects where they demonstrate communication and interpersonal skills, as well as persistence.

**7) Developed to provide multiple options for students as they prepare for entry into careers and further education through articulation agreements, supervised work-based learning opportunities, and industry-mentored or capstone projects.**

CTE programs are developed in conjunction with representatives from business, industry, labor organizations, apprenticeship programs, and secondary and postsecondary education. This ensures curricular alignment, often accomplished through articulation agreements, so that there is a seamless transition for students moving directly to employment or postsecondary education. CTE programs typically begin in high school and continue for two or more years of postsecondary education.

The nature of the contemporary workplace requires that supervised work-based learning opportunities are made available to students to help them make informed career decisions. These placements are designed to provide meaningful work experience as an integral part of the CTE program to extend, reinforce, and validate students' learning. They are organized in partnership among the local school system, business and industry, labor organizations, community agencies, and the family.

Several CTE programs offer students opportunities to complete industry-mentored or capstone projects. They are typically completed as a culminating effort by students to demonstrate the cumulative learning that has occurred during the entire CTE program of study. Students work directly with industry mentors, as individuals or in teams, to receive advice and guidance in the development of their projects. Students in CTE may complete an industry-mentored project in addition to or instead of participating in a work-based learning experience.



## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

- 8) **Based upon the reporting and use of outcome data such as, academic and technical skill attainment, placement and retention in employment, the military or postsecondary programs, for a means of upgrading programs and increasing student performance.**

Local school systems and local advisory councils collect and analyze data on student attainment of rigorous academic, employability, and technical skills. Outcome data are used to drive a process of continuous improvement for all CTE programs, including decision-making regarding the viability of such programs. State and local outcome data for CTE programs are reported to the federal government and serve as a means of benchmarking program performance and closing performance gaps.

## Local School System Process for Developing New CTE Programs

The process for developing new CTE programs is designed to be collaborative in nature and results in the submission of approved program proposals. Staff members representing the Division of Career and College Readiness (DCCR) will provide technical assistance to build local capacity to develop and continuously improve CTE programs. If the Local CTE Director decides (with input from PAC members) to implement a Maryland CTE program proposal, then the majority of steps in the program development process have already been done. To begin the process for a new local CTE program, start by contacting the DCCR Career Programs and Grants Specialist listed in Appendix A.

### Begin with a System-Wide Perspective

CTE programs are developed under clusters and programs, as part of the local school system's entire program offerings. The DCCR Career Programs and Grants Specialists interact with the CTE Local Directors and serve as liaisons to the MSDE career cluster teams. Using a system-wide perspective, Career Programs and Grants Specialists advise CTE Local Directors as they establish local plans to develop new programs and revise existing ones. The CTE Local Application becomes part of a local school system's strategic plan. Local directors typically adopt Maryland's CTE Programs of Study that are developed in consultation with representatives from business, industry, apprenticeship programs, and secondary and postsecondary educators. However, when a local program advisory council recommends implementing a new program that has not been developed by DCCR, members of the CTE staff provide technical assistance to help CTE Local Directors complete the three-phase process for locally developed programs:

- Phase 1: Consult with the LAC to align the CTE system with the state cluster frameworks using local clusters. Select CTE programs in related clusters for development or improvement. Develop short-term objectives and long-term strategic plans. Convene PACs to develop new CTE programs under the cluster frameworks – or use the frameworks to combine or improve existing programs. Use a system-wide perspective to migrate aging programs to Maryland CTE Programs of Study to eliminate or upgrade low-performing programs, and/or to add new programs. Submit program proposals to MSDE for review by the appropriate cluster team and CTE Program Review Panel.
- Phase 2: After receiving approval to offer the new program, ensure ongoing program development and improvement by implementing or phasing in CTE programs of study. Provide professional learning to teachers. Expand options for students to earn industry-recognized credentials, early college credit, and work-based learning opportunities, such as an apprenticeship.
- Phase 3: Fully implement the cluster frameworks and supporting structures such as blended instruction, career development, industry-mentored projects, and work-based learning experiences. Provide leadership to support on-going professional learning, program improvement, and monitoring.

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

### Developing CTE Programs

CTE programs are developed within the context of broad career clusters. The process for developing high quality career and technical education programs within the cluster begins by contacting the DCCR Career Programs and Grants Specialist and includes the following steps:

<b>Steps in the Program Development Process</b>	
<b>Step 1A &amp; Step 1B</b>	Establish the program advisory committee and conduct labor market needs analysis. Determine if this program will meet the criteria for high skill, high wage, or high demand.
<b>Step 2A</b>	Design the program to meet the criteria for size, scope, and quality.
<b>Step 2B</b>	Describe the program based on size, scope and quality as well as the desired student outcomes.
<b>Step 2C</b>	Describe each CTE completer course and identify end-of-course assessments.
<b>Step 2D</b>	Based on the scope and quality, identify curriculum, end-of-program assessments, licenses, and certifications.
<b>Step 2E</b>	Complete the secondary program matrix and indicate the concentrator course with an asterisk.
<b>Step 2F</b>	Specify the technical skill attainment (TSA) that students are expected to achieve (credentials and/or postsecondary credit). Complete the postsecondary program matrix and attach a copy of the articulation agreement.
<b>Step 2G</b>	Identify the work-based learning experiences or industry-mentored projects provided to students.
<b>Step 2H</b>	Identify the CTSO opportunity provided to students in the program.
<b>Repeat Step 2B</b>	Review overall Program Description to ensure accuracy with the course offerings, options for earning credentials, work-based learning experiences, and CTSO identified for the program.
<b>Step 3</b>	Identify sites and allocate resources.
<b>Step 4</b>	Submit and Present Proposal to the Division of Career and College Readiness. Staff members will convene a panel of postsecondary and industry experts to review and make recommendations for approval.
<b>Step 5</b>	Implement and continuously improve programs.

#### Step 1A and 1B

##### **Establish the program advisory committee and conduct the labor market needs analysis.**

The first step in the process is to establish an industry-led PAC with input from postsecondary educators; and business, industry, and/or labor organizations representing the program as well as the broader cluster. The PAC lists are submitted with each program proposal. The role of the PAC is to conduct a needs analysis to review the cluster, pathways, and CTE programs under consideration. The PAC reviews labor market information at local and state levels to determine if the proposed program will the criteria for *high skill*, *high wage*, or *high demand*. Opportunities to include articulation agreements are considered in the earliest stages of the CTE program development process.

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

### Definition of High-Skill Careers

CTE programs of study that demonstrate high-skill lead to careers that:

1. Require previous work-related skills, knowledge, or experience of one or more years;
2. Have a [Specific Vocational Preparation](#) (SVP) rating of at least six as defined by [O\\*Net](#);
3. Require state or federal licensing or industry-recognized certification; or
4. Require a recognized postsecondary credential or degree.

### Definition of High-Wage Careers

CTE programs of study that demonstrate high-wage are those that lead to careers that exceed the state average annual wage. The 2018 average annual wage in Maryland was \$58,770.

### Definition of In-Demand Careers

CTE programs of study that demonstrate in-demand are those that lead to careers with a growth rate over ten years of at least 7% or a two-year occupational projected growth of 2.5%.

### Step 2A and 2B

**Use the guidance in the local application to determine if the program has the potential to meet the criteria for size, scope and quality. Based on that, describe the anticipated student outcomes.**

All CTE programs of study must be sufficient in size, scope, and quality to meet the needs of all students served by local school systems and community colleges. Programs of study that do not meet size, scope, and quality criteria may not be eligible for Perkins V funding. Below are the criteria for size, scope, and quality as they are listed in the CTE Local Application. Please note that the criteria were modified to be included in the *New Local Secondary CTE Program of Study Form*. CTE Directors, working with their PACs, must address the criteria in their deliberations to identify and implement new CTE programs of study.

Criteria for Size	Evaluation Results	
The local school system offers at least two state-approved CTE programs of study in recognized career clusters.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Each CTE concentrator course in approved CTE programs of study must have a minimum enrollment of ten concentrators over a four-year period. If this requirement is not met, the local school system or community college will provide evidence of continued progress toward increased class size to meet the meet minimum requirement.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
The local school system has the required number of staff, availability of equipment, and access to facilities to meet requirements detailed by each program of study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**Policies and Procedures for the Development & Continuous Improvement of  
Career and Technical Education Programs of Study**

Criteria for Scope	Evaluation Results	
Curricula for each program of study is aligned to state-approved industry standards that lead to students earning recognized credentials, certifications, licenses, college credit, or degrees.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Curricula for each program of study reflect a progression from secondary to postsecondary and community college to bachelor degree programs.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Curricula for each program of study allow students to learn and demonstrate academic, technical, and employability skills.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Curricula for each program of study demonstrate a continuum of learning that allows students to progress in a career field.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Curricula for each program of study include differentiated supports and modifications to meet the needs of diverse learners.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Each CTE student in each program of study has a written career and academic plan in place that includes: <ul style="list-style-type: none"> <li>• The required courses to complete their CTE program of study;</li> <li>• The required courses to graduate;</li> <li>• The required assessments to earn a certification, license, credential, or degree in the CTE program;</li> <li>• The required academic assessments to graduate; and</li> <li>• The timeline to take courses, assessments, and complete work-based learning experiences.</li> </ul>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
All students, regardless of race, color, national origin, sex, or disability, have equitable access to high-quality CTE programs as required by <a href="#">Code of Maryland Regulation 13A.04.02.04</a>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Approved programs of study are guided by Local Advisory Councils and Program Advisory Committees according to the Career and Technical Education (CTE) Local Advisory Council (LAC) and Program Advisory Committee (PAC) Policies and Procedures (Annotated Code of Maryland, Education Article §21-101).	Yes <input type="checkbox"/>	No <input type="checkbox"/>
All CTE secondary programs of study adhere to <a href="#">CTE Development Standards</a> which are required by <a href="#">Code of Maryland Regulations 13A.04.02.01</a>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**Policies and Procedures for the Development & Continuous Improvement of  
Career and Technical Education Programs of Study**

Criteria for Quality	Evaluation Results	
The local school system or community college achieves or consistently makes progress towards local targets established for state and federal core indicators of performance.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
CTE programs of study are delivered by teachers who meet state requirements to teach their content at the secondary level.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
CTE programs of study are delivered by teachers who earned a minimum of effective on their teacher evaluation as defined by <a href="#">Code of Maryland Regulation 13A.07.09</a> within three years.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Each CTE program of study meets all the requirements of the MSDE evaluation criteria found in the <a href="#">Policies and Procedures for the Development and Continuous Improvement of CTE Programs of Study</a> .	Yes <input type="checkbox"/>	No <input type="checkbox"/>
For each CTE program of study, the local school system provides all students, including students in special populations, the opportunity to: <ul style="list-style-type: none"> <li>• Participate in at least one work-based learning experience (internship, apprenticeship, etc.);</li> <li>• Earn college credit and/or industry credentials; and</li> <li>• Participate in Career and Technical Student Organizations.</li> </ul>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Professional learning opportunities, informed by data, are provided for administrators, teachers, faculty, counselors and support personnel to improve student-learning outcomes. All secondary professional learning must be guided by the Maryland-endorsed <a href="#">National Learning Standards</a> .	Yes <input type="checkbox"/>	No <input type="checkbox"/>
The local school system or community college meets local and state annual data-reporting requirements and conducts reviews of all annual Program Quality Index reports to inform program improvement.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Human resources are included in the recruitment process to ensure a diverse CTE teacher and faculty member candidate pool.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Metrics are used to ensure that CTE teacher and faculty member recruitment strategies are successful.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Teacher retention rates are reviewed annually, for the most recent 3 years, to understand the top three contributing factors to CTE teacher and faculty member turnover.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

In conjunction with addressing the size, scope, and quality of new programs, the CTE Director with the PAC must use all available research to review the appropriate cluster framework and identify potential broad career programs for local CTE program offerings. The PAC determines which CTE programs to select for further development in relation to programs that already exist in the cluster. This process also includes an analysis of the relevance and performance of existing programs, the identification of new programs in relation to the core functions of the industry, as well as current and future workforce development needs. If a Maryland CTE Program of Study is not available, a new locally developed CTE program may be proposed. The CTE Local Directors are encouraged to contact the DCCR Career Programs and Grants Specialist (see Appendix A) for technical assistance, or they should schedule a meeting with the appropriate MSDE cluster team (see Appendix B) as the program is planned.

Next, the PAC reviews the technical skill standards most closely aligned with the program to ensure that they are relevant and current. The standards serve as the foundation for the development of curriculum, instruction and assessment strategies. The PAC identifies the technical and workplace skills (*21st Century Skills*) as well as the academic standards that students need to master to succeed in the program. The standards include the:

- 1) Core knowledge and skills that all students in the cluster will master;
- 2) Academic, technical and workplace skills embedded in the program;
- 3) Knowledge and skills learned best through participation in industry-mentored projects and/or supervised work-based learning experiences; and
- 4) Knowledge and skills that require more extensive experience or industry training and certification.

After a thorough review process, the PAC recommends the program to be developed and provides advice regarding credit and degree programs, articulation and dual enrollment agreements, and industry-recognized credentials such as licenses and certifications. Administrators and teachers develop the program overview that broadly describes what students are expected to know and be able to demonstrate after completing the program. The overview clearly describes prerequisite requirements as well as knowledge and skills students will acquire in the program. Written in clear and concise language, the overview is useful in marketing the program as a route to graduation to target audiences, such as students, parents, and guidance counselors.

### Step 2C

#### **Describe each CTE completer course and identify end-of-course assessments.**

Administrators and teachers develop the course descriptions and consult with the PAC to identify end-of-course assessments. Review the listing of MSDE-approved School Courses for the Exchange Data (SCED) to identify the appropriate CTE SCED code for each course. Course descriptions are written based on well-defined goals and objectives. These clearly specify what students will know and be able to demonstrate the results of participating in the course. End-of-course assessments are culminating experiences used to document student attainment of the knowledge and skills included in each course. Program assessments are aligned with the standards and performance indicators used to develop the program. As such, assessments include projects, written and performance examinations, and tests leading to credentialing and licensing.

Assessment results must be both reliable and valid. An assessment is reliable if it yields results that are accurate and stable. A reliable assessment is one that consistently achieves the same

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

results with the same (or similar) cohort of students. A valid assessment is one that measures what it is intended to measure.

There are three criteria for developing programs as follows:

- 1. Cluster Foundation Knowledge and Skills.** The foundation skills provide students with a working knowledge of all aspects of the industry addressed by the cluster, or several programs within the cluster. Cluster foundation skills include the most critical business functions or activities and an awareness of the full range of careers. The foundation knowledge and skills provide students with an overview of the higher-level responsibilities in designing, managing, performing and improving these critical business functions or activities. Maryland's state standards, employability skills and career development are linked to achieve integration. These knowledge and skills are not only designed to inform the development of career exploration activities; rather, the primary intention is to integrate them into rigorous courses that provide students with the foundation knowledge and skills important to the industry. [Maryland's Career Development Framework](#) and standards are implemented locally to assist students in designing their academic and career plans.
- 2. Specialization within Programs.** A program usually includes technical content from the pathways defined in Maryland's career cluster frameworks. Content is defined by program technical content standards and Maryland's state academic standards. The program technical content standards must provide students with more in-depth technical and academic knowledge and skills needed to perform higher-level responsibilities for the critical business activities addressed in the cluster foundation course.
- 3. Certification and College Credit.** The program sequence results in a recognized industry certification (including state licenses/certifications) and/or earned college credits toward a postsecondary degree, certificate, or apprenticeship program. Content is defined by the technical content standards required for licensure or industry-recognized certification and/or postsecondary credit. Content is also linked to Maryland's state academic standards. College credit can be earned through dual enrollment, credit by examination, articulation, and transcribed credit.

### Step 2D

#### **Determine appropriate curriculum, end-of-program assessments, licenses, and certifications.**

A primary responsibility of the program advisory committee (PAC) is to assist in identifying the appropriate curriculum, end-of-program assessments, licenses, and certifications. Curriculum can be adopted, adapted, or developed depending on the decisions of the PAC. Curriculum is based on the most relevant academic, technical, and employability standards available.

Academic courses are identified to complement and support CTE programs. Opportunities for CTE program articulation are identified as the program is developed.

Teachers consult with the PAC to determine the end-of-program assessments and licensing or certification examinations that will be used to document student performance. By offering end-of-program assessments and licensing or certification examinations, student performance is documented and teachers have information to improve learning and instruction. These assessments are aligned with the academic, technical, and industry skills that are integrated into the curriculum and must be valid and reliable. As such, they include both written and performance-based assessments and extend beyond traditional competency profiles. Opportunities exist for students to earn credentials that are valued by employers, labor unions,



## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

and college admissions officers. Academic and CTE teachers along with postsecondary faculty work with PAC members to create seamless programs that prepare students to transition from secondary to postsecondary and/or enter the world of work.

### **Step 2E**

#### **Complete the secondary program matrix.**

The program matrix defines a planned, sequential program of study that aligns academic subjects with at least three credits and three courses in CTE including a capstone or culminating experience such as an industry-mentored project and/or work-based learning. Work-based learning experiences or capstone projects must be required of all students, with rare exceptions. The program matrix includes the specific academic and CTE courses required for success in the CTE program as well as in postsecondary education (i.e., early college credit through articulation agreements - dual enrollment, advanced placement, transcribed and articulated credit).

The sequence of courses is reflected in a matrix that identifies:

1. State and local academic courses required for graduation that align with and complement the CTE program,
2. CTE courses that blend instruction and ensure student mastery of the industry standards for the program;
3. The concentrator course (which typically occurs after students are enrolled in the third course of the program); and
4. The postsecondary program sequences available to students pursuing further education, including apprenticeships and articulated and dual enrollment courses.

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 complete sequence because they provide prerequisite skills for both academic courses and CTE programs. Academic courses are counted only if they are specifically tailored to serve mainly CTE students and have been revised to reflect industry skill standards. Technology Education or Advanced Technology Education and Personal Financial Literacy courses are not acceptable for credit in the CTE program sequence.

In consultation with the PAC, educators develop a list of potential career options students are preparing to enter after completing the secondary and postsecondary program sequences and describe the options for further education. The career titles should align with those identified in the secondary and postsecondary 2010 Classification of Instructional Programs – Standard Occupational Classification System (CIP-SOC) Crosswalks. These documents are located on the CTE Leaders Blackboard site in the CTE Policies and Procedures folder. There is a national effort to update these documents in the upcoming months, and the new crosswalks should be used when they become available.

### **Step 2F**

#### **Specify the technical skill attainment that students are expected achieve.**

Approved CTE programs often include opportunities for students to earn postsecondary credit while still in high school. Options to earn early college credit, including advanced placement, dual enrollment, transcribed and articulated credit, and apprenticeships are available to students. Program articulation is preferable to course-by-course articulation so that students can earn advanced placement in a college major or an apprenticeship program approved by the Maryland Apprenticeship and Training Council (MATC). The program sequences include

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

secondary and postsecondary courses required of students. In addition, many approved CTE programs offer students opportunities to earn credentials, such as industry-recognized certifications and licenses, prior to graduating from high school. Evidence of technical skill attainment enable students to get a head start in their careers and/or postsecondary education.

In developing CTE program sequences, secondary and postsecondary educators collaborate to complete the two- and/or four-year program matrix. The CTE Local Director submits a copy of the articulation agreement with the program proposal or amendment to MSDE.

### **Step 2G**

#### **Identify the work-based learning experiences and industry-mentored projects provided to students.**

Supervised work-based learning experiences or industry-mentored projects are a required component of an approved CTE program. They are provided to enrich and advance school-based instruction and are required for all students who demonstrate readiness to participate. The definitions for work-based learning experiences and industry-mentored projects are defined in the glossary.

### **Step 2H**

#### **Identify the CTSO opportunity provided to students in the program.**

Through intra-curricular CTSOs, students have opportunities to participate in career development experiences, demonstrate and further refine their technical skills, and exhibit leadership abilities. The PAC is a valuable resource for obtaining the support necessary to implement successful student organizations. Students enrolled in CTE programs are encouraged to participate in CTSOs or other professional associations or organizations as identified by the program of study.

**Repeat Step 2B: Before proceeding, review the overall program description in Step 2B to ensure accuracy with the course offerings, industry and postsecondary credential associated with the program, work-based learning opportunities and industry-mentored projects, and the CTSO identified for the program.**

### **Step 3**

#### **Identify sites and allocate resources.**

After considering resources, the CTE Local Director determines where to offer the program and specifies the number of credits required for program completion by filling out the Instructional Program Data Sheet. The PAC assists teachers in examining what resources currently exist to support the cluster and programs, and identifying any additional resources needed for successful implementation. These include staffing, instructional materials, equipment, training and professional learning, and work-based learning experiences and industry-mentored projects for teachers and students. Each year, these needs are discussed and considered when developing budgets and allocating fiscal and human resources. These considerations are reflected in the Local CTE Perkins Application.

### **Step 4**

#### **Submit Proposal to MSDE/DCCR for Cluster Team and Expert Panel Review.**

The CTE Local Director reviews the contents of the CTE program proposal to ensure accuracy and completeness, obtains the signature of the superintendent, signs the cover page, and submits the proposal to MSDE via [DocuShare](#) for review and approval.

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

Proposals are accepted by DCCR three times a year. Dates are provided by MSDE on an annual basis. Program proposals are reviewed by the appropriate MSDE Career Programs and Grants Specialist and cluster team and a feedback form is provided to the CTE Local Director (Appendix C). If needed, clarifying questions and/or requests for revisions are emailed to the CTE Local Director. Once all requests from MSDE are responded to, the program proposal is sent to the CTE Program Review Panel with MSDE's recommendations. If the MSDE cluster team recommends the program proposal for approval, the CTE Local Director does not need to present the proposal to the Panel.

If the program proposal is not recommended for approval by the MSDE cluster team, the CTE Local Director may elect to present the program proposal to the CTE Program Review Panel or withdraw it until it is in approvable form. If presenting the proposal, the local CTE team, led by the CTE Local Director, will have up to 30 minutes to discuss their proposal (in person or via conference call). If two or more CTE Local Directors work together to develop a program, they can present as a team. The CTE Local Director assembles the local team that presents to the panel. In addition to answering the questions posed by the panel, the presentation will provide a brief overview of the program, a description of the intended outcomes, and identification of the articulation and/or certification options available to students. The Panel will recommend actions (approval, modifications or disapproval) to the Assistant State Superintendent of the Division of Career and College Readiness.

The CTE Program Review Panel will consist of no more than seven members and include CTE Local Directors as well as business, postsecondary, and community partners

The Assistant State Superintendent of the Division of Career and College Readiness will review the Panel's recommendations and make the final decision on the approval status of the proposal. The CTE Local Director must submit required modifications within 45 days of the date of the presentation, or approval will not occur until the next scheduled meeting of the Panel. Once the program is approved, a letter will be sent to the local superintendent from the Assistant State Superintendent of the Division of Career and College Readiness and the program is added to "List A" – the DCCR list of approved CTE programs.

### **Step 5 Implement and Continuously Improve Programs.**

Each LSS develops and submits a CTE Local Application (hereafter referred to as the Application) for Program Improvement to MSDE, which is submitted annually. The application reflects identified improvements, updates and/or adoption of new CTE programs. The CTE Local Director, in concert with stakeholders, including the local advisory council, develops the Local CTE Perkins Application to ensure it reflects new and improved CTE programs.

As part of the continuous improvement process, the local PAC annually reviews programs within the context of the career clusters to ensure that they keep pace with changes in industry. After reviewing all available program data, the PAC and educators discuss upgrades that need to be made to current CTE programs. During this dialog, the PAC informs educators about changes within the industry and recommends modifications that need to be made in curriculum and instruction. Program improvements are described and addressed in the local application.

If major modifications to the CTE program of study are required, then an amendment must be submitted to MSDE. The process for amending CTE programs is described on pages 30 through 37.

## Directions for Completing the New Program Proposal for Submission to MSDE/DCCR

The following requirements comprise the components that are submitted to the MSDE/DCCR when developing a CTE program proposal. Staff members representing the Division of Career and College Readiness will provide leadership and technical assistance to build the capacity of local school systems' representatives in developing and amending program proposals.

The CTE Local Director contacts the DCCR Career Programs and Grants Specialist to begin the program development process. The DCCR Career Programs and Grants Specialist serves as the primary resource person to the local program development team with assistance from MSDE Cluster Team Members (see Appendices A and B).

The CTE Local Director (or designee) assumes the lead responsibility for planning the program. The DCCR Career Programs and Grants Specialist assists by identifying resources, building local school system capacity to develop programs, and providing technical assistance in program development and implementation.

The Career Programs and Grants Specialist reviews the program proposal submission calendar with the CTE Local Director to determine when the program proposal will be submitted to MSDE for review by the cluster team and the CTE Program Review Panel.

Electronic copies of all Maryland CTE Programs of Study are available to download from the [CTE Leaders eCommunity Canvas site](#). The contents of the proposals are consistent with the required components of a new CTE program. When local school systems adopt a Maryland CTE Program of Study, all of the program requirements must be adhered to without modification. DCCR will provide templates to CTE Local Directors for completion as Maryland CTE Programs of Study are developed.

Proposals for new CTE programs are uploaded to [DocuShare](#) with completed MSDE forms signed by the appropriate personnel. The forms are found on pages 18 through 30. Once completed and signed, in **BLUE** ink, upload all documents using the appropriate MSDE submission process in the folder, Maryland CTE Programs of Study. Then send an email to Nina Roa at [nina.roa@maryland.gov](mailto:nina.roa@maryland.gov), and copy your Career Programs and Grants Specialist, indicating which document has been uploaded and is ready for routing and review.

**Uploaded documents showing the signatures in BLUE ink are considered originals and no copies need to be mailed. Otherwise, the documents requiring signature must be signed in BLUE ink and submitted through the mail to Nina Roa at:**

Nina Roa, Director of Finance and Legislation for Career Programs  
Maryland State Department of Education  
Division of Career and College Readiness  
200 West Baltimore Street  
Baltimore, Maryland 21201-2595

# Do Not Copy This Form

## New Local Secondary CTE Program of Study Form

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 (MSDE), 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:					
CIP - Use a CIP number from the approved list:		Program Options:	1.	2.	3.
Credentials For Technical Skill Attainment	<input type="checkbox"/> yes <input type="checkbox"/> no	This program provides students the opportunity to earn early college credit. The academic and technical course sequences for both secondary and postsecondary programs are included herein.			
	<input type="checkbox"/> yes <input type="checkbox"/> no	Enclosed is a copy of the articulation agreement (Copy required for CTE program approval if the program is articulated with a postsecondary education provider).			
	<input type="checkbox"/> yes <input type="checkbox"/> no	This program provides students with the opportunity to continue into or earn credit towards a registered apprenticeship			
	<input type="checkbox"/> yes <input type="checkbox"/> no	This program provides students with the opportunity to earn an industry-recognized credential. The credential is identified herein.			
Program Start Date:					
Signature of CTE Local Director:				Date:	
Signature of Local Superintendent:				Date:	

TO BE COMPLETED BY MSDE/DCCR			
Program Received Date:			
CTE Control Number:		Fiscal Year:	
MSDE Cluster Title:			

**Approval Starts FY: \_\_\_\_\_**

\_\_\_\_\_  
 Signature, Assistant State Superintendent, Career and College Readiness

\_\_\_\_\_  
 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 must 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 is acceptable as long as all information is provided.

### Program Advisory Committee List

<b>Membership: First entry must be the industry representative who is leading the PAC.</b>					
PAC Leader Name:			Representation:		
Title:			<input type="checkbox"/> Industry <input type="checkbox"/> Secondary <input type="checkbox"/> Postsecondary		
Affiliation:					
Address1:					
Address2:					
City:		State:	Zip		
Phone:		Fax:			
Email:					
Area of Expertise:					
Role:	<input type="checkbox"/> Work-based Learning		<input type="checkbox"/> Curriculum Development		<input type="checkbox"/> Skills Standards Validation
	<input type="checkbox"/> Staff Development		<input type="checkbox"/> Program Development		<input type="checkbox"/> Other (specify):

<b>Membership:</b>					
PAC Member Name:			Representation:		
Title:			<input type="checkbox"/> Industry <input type="checkbox"/> Secondary <input type="checkbox"/> Postsecondary		
Affiliation:					
Address1:					
Address2:					
City:		State:	Zip		
Phone:		Fax:			
Email:					
Area of Expertise:					
Role:	<input type="checkbox"/> Work-based Learning		<input type="checkbox"/> Curriculum Development		<input type="checkbox"/> Skills Standards Validation
	<input type="checkbox"/> Staff Development		<input type="checkbox"/> Program Development		<input type="checkbox"/> Other (specify):

<b>Membership:</b>					
PAC Member Name:			Representation:		
Title:			<input type="checkbox"/> Industry <input type="checkbox"/> Secondary <input type="checkbox"/> Postsecondary		
Affiliation:					
Address1:					
Address2:					
City:		State:	Zip		
Phone:		Fax:			
Email:					
Area of Expertise:					
Role:	<input type="checkbox"/> Work-based Learning		<input type="checkbox"/> Curriculum Development		<input type="checkbox"/> Skills Standards Validation
	<input type="checkbox"/> Staff Development		<input type="checkbox"/> Program Development		<input type="checkbox"/> Other (specify):

<b>Membership:</b>					
PAC Member Name:		Representation:			
Title:		<input type="checkbox"/> Industry <input type="checkbox"/> Secondary <input type="checkbox"/> Postsecondary			
Affiliation:					
Address1:					
Address2:					
City, State, Zip:		State:	Zip		
Phone:		Fax:			
Email:					
Area of Expertise:					
Role:	<input type="checkbox"/> Work-based Learning		<input type="checkbox"/> Curriculum Development		<input type="checkbox"/> Skills Standards Validation
	<input type="checkbox"/> Staff Development		<input type="checkbox"/> Program Development		<input type="checkbox"/> Other (specify):

<b>Membership:</b>					
PAC Member Name:		Representation:			
Title:		<input type="checkbox"/> Industry <input type="checkbox"/> Secondary <input type="checkbox"/> Postsecondary			
Affiliation:					
Address1:					
Address2:					
City, State, Zip:		State:	Zip		
Phone:		Fax:			
Email:					
Area of Expertise:					
Role:	<input type="checkbox"/> Work-based Learning		<input type="checkbox"/> Curriculum Development		<input type="checkbox"/> Skills Standards Validation
	<input type="checkbox"/> Staff Development		<input type="checkbox"/> Program Development		<input type="checkbox"/> Other (specify):

<b>Membership:</b>					
PAC Member Name:		Representation:			
Title:		<input type="checkbox"/> Industry <input type="checkbox"/> Secondary <input type="checkbox"/> Postsecondary			
Affiliation:					
Address1:					
Address2:					
City, State, Zip:		State:	Zip		
Phone:		Fax:			
Email:					
Area of Expertise:					
Role:	<input type="checkbox"/> Work-based Learning		<input type="checkbox"/> Curriculum Development		<input type="checkbox"/> Skills Standards Validation
	<input type="checkbox"/> Staff Development		<input type="checkbox"/> Program Development		<input type="checkbox"/> Other (specify):

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

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 Maryland Department of Labor (MDL) 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 MDL. If the occupation is new or emerging and no data exist, supporting evidence is submitted with the proposal (e.g., 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 program).

**STEP 2A: SIZE, SCOPE, AND QUALITY – All CTE programs of study must be sufficient in size, scope, and quality to meet the needs of all students served by local school systems and community colleges. Programs of study that do not meet size, scope and quality criteria may not be eligible for Perkins V funding.**

<b>Criteria for Size</b>	There is a plan to ensure that the CTE concentrator course for this program will have a minimum of ten concentrators by the third year of the program, and this number will be maintained over a four-year period.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Size</b>	The local school system has the required number of staff, availability of equipment, and access to facilities to meet requirements detailed by each program of study.	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Briefly describe the school system's plan on meeting the criteria for size. Provide additional information if you checked "no" to any of the criteria.

**STEP 2A: SIZE, SCOPE, AND QUALITY – All CTE programs of study must be sufficient in size, scope, and quality to meet the needs of all students served by local school systems and community colleges. Programs of study that do not meet size, scope and quality criteria may not be eligible for Perkins V funding.**

<b>Criteria for Scope</b>	Curriculum for the program of study aligns to state-approved industry standards that lead to students earning recognized credentials, certifications, licenses, college credit, or degrees.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Scope</b>	Curriculum for the program of study reflects a progression from secondary to postsecondary and community college to bachelor degree programs.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Scope</b>	Curriculum for the program of study allow students to learn and demonstrate academic, technical, and employability skills.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Scope</b>	Curriculum for the program of study demonstrates a continuum of learning that allows students to progress in the career field associated with the program.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Scope</b>	Curriculum for the program of study include differentiated supports and modifications to meet the needs of diverse learners.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Scope</b>	Students' academic and career plans will be used to help gauge students' interest in the program, and their plans include information that students have knowledge of the following: <ul style="list-style-type: none"> <li>• The required courses to complete their CTE program of study;</li> <li>• The required courses to graduate;</li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No



**STEP 2A: SIZE, SCOPE, AND QUALITY** – All CTE programs of study must be sufficient in size, scope, and quality to meet the needs of all students served by local school systems and community colleges. Programs of study that do not meet size, scope and quality criteria may not be eligible for Perkins V funding.

	<ul style="list-style-type: none"> <li>The required assessments to earn a certification, license, credential, or degree in the CTE program;</li> <li>The required academic assessments to graduate; and</li> <li>The timeline to take courses, assessments, and complete work-based learning experiences.</li> </ul>		
<b>Criteria for Scope</b>	All students, regardless of race, color, national origin, sex, or disability, have equitable access to the CTE programs as required by <a href="#">Code of Maryland Regulation 13A.04.02.04</a> .	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Scope</b>	The program is guided by an active Local Advisory Council and Program Advisory Committee.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Scope</b>	The CTE program of study adheres to <a href="#">CTE Development Standards</a> which are required by <a href="#">Code of Maryland Regulations 13A.04.02.01</a>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Briefly describe the school system’s plan on meeting the criteria for scope. Provide additional information if you checked “no” to any of the criteria.			

**STEP 2A: SIZE, SCOPE, AND QUALITY** – All CTE programs of study must be sufficient in size, scope, and quality to meet the needs of all students served by local school systems and community colleges. Programs of study that do not meet size, scope and quality criteria may not be eligible for Perkins V funding.

<b>Criteria for Quality</b>	The local school system achieves or consistently makes progress towards local targets established for state and federal core indicators of performance.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Quality</b>	The teachers identified for this CTE program of study meet the state requirements to teach the program content.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Quality</b>	Teachers who have earned a minimum of effective on their evaluation (as defined by <a href="#">Code of Maryland Regulation 13A.07.09</a> ) were identified or selected for this CTE program of study.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Quality</b>	The CTE program of study meets all the requirements of the MSDE evaluation criteria found in the <a href="#">Policies and Procedures for the Development and Continuous Improvement of CTE Programs of Study</a> .	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Quality</b>	The local school system provides the students in this CTE program, including students in special populations, the opportunity to: <ul style="list-style-type: none"> <li>Participate in at least one work-based learning experience (internship, apprenticeship, etc.);</li> <li>Earn college credit and/or industry credentials; and</li> <li>Participate in Career and Technical Student Organizations.</li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Criteria for Quality</b>	There are professional learning opportunities, informed by data, available for the teachers in this CTE program, and the professional learning is guided by the Maryland-endorsed <a href="#">National Learning Standards</a> .	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Briefly describe the school system’s plan on meeting the criteria for quality. Provide additional information if you checked “no” to any of the criteria.

**STEP 2B: PROGRAM OVERVIEW** – After determining the cluster and program 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.

**Indicate the title and source of the skills standards for this program:**

**Program Overview:**

**STEP 2C: COURSE DESCRIPTIONS AND END OF COURSE ASSESSMENTS** – Insert each CTE complete 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 instruments that will be used to document student attainment of the knowledge and skills included in each course and specify additional information as appropriate.

**Course Title:** \_\_\_\_\_  
**Course SCED: (Use a Course SCED number from the approved list.)**  
**Course Description:** \_\_\_\_\_

**End of Course Assessment**

Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.

- School system-designed end-of-course assessment
- Partner-developed exam (specify): \_\_\_\_\_
- Licensing exam (specify): \_\_\_\_\_
- Certification or credentialing exam (specify): \_\_\_\_\_
- Nationally recognized examination (specify): \_\_\_\_\_
- Industry-approved teacher-designed end-of-course assessment

**Course Title:** \_\_\_\_\_  
**Course SCED: (Use a Course SCED number from the approved list.)**  
**Course Description:** \_\_\_\_\_

**End of Course Assessment**

Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.

- School system-designed end-of-course assessment
- Partner-developed exam (specify): \_\_\_\_\_
- Licensing exam (specify): \_\_\_\_\_
- Certification or credentialing exam (specify): \_\_\_\_\_
- Nationally recognized examination (specify): \_\_\_\_\_
- Industry-approved teacher-designed end-of-course assessment

**Course Title:** \_\_\_\_\_  
**Course SCED: (Use a Course SCED number from the approved list.)**  
**Course Description:** \_\_\_\_\_

**End of Course Assessment**

Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.

- School system-designed end-of-course assessment
- Partner-developed exam (specify): \_\_\_\_\_
- Licensing exam (specify): \_\_\_\_\_
- Certification or credentialing exam (specify): \_\_\_\_\_
- Nationally recognized examination (specify): \_\_\_\_\_
- Industry-approved teacher-designed end-of-course assessment

**STEP 2C: COURSE DESCRIPTIONS AND END OF COURSE ASSESSMENTS** – Insert each CTE complete 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 instruments that will be used to document student attainment of the knowledge and skills included in each course and specify additional information as appropriate.

**Course Title:** \_\_\_\_\_  
**Course SCED: (Use a Course SCED number from the approved list.)**  
**Course Description:** \_\_\_\_\_

**End of Course Assessment**

Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.

- School system-designed end-of-course assessment
- Partner-developed exam (specify): \_\_\_\_\_
- Licensing exam (specify): \_\_\_\_\_
- Certification or credentialing exam (specify): \_\_\_\_\_
- Nationally recognized examination (specify): \_\_\_\_\_
- Industry-approved teacher-designed end-of-course assessment

**Course Title:** \_\_\_\_\_  
**Course SCED: (Use a Course SCED number from the approved list.)**  
**Course Description:** \_\_\_\_\_

**End of Course Assessment**

Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.

- School system-designed end-of-course assessment
- Partner-developed exam (specify): \_\_\_\_\_
- Licensing exam (specify): \_\_\_\_\_
- Certification or credentialing exam (specify): \_\_\_\_\_
- Nationally recognized examination (specify): \_\_\_\_\_
- Industry-approved teacher-designed end-of-course assessment

**Course Title:** \_\_\_\_\_  
**Course SCED: (Use a Course SCED number from the approved list.)**  
**Course Description:** \_\_\_\_\_

**End of Course Assessment**

Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.

- School system-designed end-of-course assessment
- Partner-developed exam (specify): \_\_\_\_\_
- Licensing exam (specify): \_\_\_\_\_
- Certification or credentialing exam (specify): \_\_\_\_\_
- Nationally recognized examination (specify): \_\_\_\_\_
- Industry-approved teacher-designed end-of-course assessment

**STEP 2D: 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-course assessment
- Partner-developed exam (specify): \_\_\_\_\_
- Licensing exam (specify): \_\_\_\_\_
- Certification or credentialing exam (specify): \_\_\_\_\_
- Nationally recognized examination (specify): \_\_\_\_\_
- Industry-approved teacher-designed end-of-course assessment

**STEP 2E:** Program Sequence Matrix (Include the program sequence that provides students with a route to High School graduation, an Associate’s Degree, and/or a Bachelor’s Degree program). Identify the program options. Complete the matrix for the 9-12 CTE program of study and the articulated program sequence in 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 CTE program matrix defines a planned, sequential program of study that consists of a minimum of three credits and three courses in CTE coursework in high school including work-based learning and/or industry-mentored projects. Work-based learning (WBL) 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 program and postsecondary linkages (e.g., dual enrollment, transcribed 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 and Personal Financial Literacy courses are not acceptable for credit in the CTE program sequence.

**The LSS program title must be the same one that appears on the cover page. If more than one program option is offered in the program, complete a matrix for each program option (MSDE will insert the CIP number). Example: An IT program may include options in networking and programming.**

<b>Program:</b>			<b>CIP Number (For MSDE Use)</b>	
<b>Graduation Requirements</b>	<b>Grade 9</b>	<b>Grade 10</b>	<b>Grade 11</b>	<b>Grade 12</b>
English - 4	English 9	English 10	English 11 AP Language	English 12 AP Literature
Mathematics - 4	Algebra I	Geometry	Algebra II	Trigonometry, Pre-Calculus, Calculus, or AP Calculus
Science - 3	Earth or Physical Science	Biology or AP Biology	Chemistry or AP Chemistry	Physics or AP Physics
Social Studies - 3	US Government	World History AP European	US History AP US History	Government AP Government
Physical Education - .5 Health Education - 1	.5 Physical Education	1 Health		
Fine Arts - 1	.5 Fine Arts	.5 Fine Arts		
Computer Science, Engineering, or Technology Education - 1	Foundations of Tech Ed or Comp Sci Principles			
CTE Completer Program – 3 or more courses for a minimum total of 3 credits *Concentrator course				
World Language - 2	World Language	World Language		

Use the occupational titles from CIP-SOC Crosswalks found on the CTE Leaders Blackboard Site to provide a list of examples of careers students are preparing to enter and postsecondary options:

**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. Section 2E must be completed before an articulated CTE program of study can be approved. [A copy of the Articulation Agreement is also 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 articulated CTE program of study. Indicate which courses receive articulated or transcribed 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 an articulated CTE program of study can be approved. [A copy of the Articulation Agreement is also 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 articulated CTE program of study. Indicate which courses receive articulated or transcribed 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 2F: CREDENTIALS FOR TECHNICAL SKILL ATTAINMENT** – Fill in the name of the partnering college or agency. Specify the credential that students will earn, and/or the number of college credits or hours granted. This information is required before a program can be designated as a **CTE articulated program of study**.

Option	Partner	Credential	College Credit
Dual Enrollment Credit			
Transcripted Credit			
Articulated Credit			
Credit by Exam			
Advanced Placement			
Maryland Department of Labor State Skill Certificate			
Certifications			
License			
Degree			
Other Technical Skill Assessment (specify)			

**STEP 2G: Industry-Mentored Project or Work-Based Learning Opportunities.**

Work-Based Learning is defined as activities at the high school and college levels that involve actual work experience and connect classroom learning to work. This is an all-encompassing term that includes apprenticeships, cooperative education, and internships. 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 must 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. Check each box that applies.

- Capstone Work-Based Learning: The on-the-job component of the program is subsequent to the in school, skill development component. Students are placed at training sites that have the potential to extend and refine competencies that are developed in the in-school component.
- Industry-Mentored Project: The capstone project is typically completed as a culminating effort by students to demonstrate the cumulative learning that has occurred during the entire CTE program of study. Students work directly with industry mentors, as individuals or in teams, to receive advice and guidance in the development of their projects. Students in CTE may complete an industry-mentored project in addition to or instead of participating in a work-based learning experience.
- Integrated Work-Based Learning: The on-the-job component of the program is entered after some in-school skill development, and the in-school skill development component is maintained concurrent with on-the-job experience. Students are placed at training sites that have potential to complement the in-school component.
- Internship: Internships are short-term, paid or unpaid experiences that offer students a chance to work under the tutelage of employers and experience on-the-job training in a mentoring relationship. Students work with an employer to learn about a particular industry or career program. Workplace activities may include special projects, a sample of tasks from different jobs, or tasks from a single career program.
- In-school clinic or school-based enterprise: A school-sponsored enterprise or clinic is an enterprise in which goods or services are produced by students as part of their school program. School-sponsored enterprises or clinics typically involve students in the management of a project that may involve the sale of goods or services for use by others. Enterprises may be undertaken on or off the school site, but are always part of the school's program.
- Youth or Registered Apprenticeship: Apprenticeship is a voluntary, industry-driven program sponsored by employers, employer associations, and jointly by management and labor. An apprentice, as an employee, receives supervised, structured, on-the-job training combined with related technical instruction in a specific occupation. Apprenticeship is open to anyone age 16 or older; however, an employer may set a higher entry age. Individuals must be age 18 to apprentice in specified hazardous occupations. The Maryland Apprenticeship and Training Council (MATC) is the registration agency and approves all apprenticeship programs. The Apprenticeship and Training Council has approved and registered programs in 207 occupations.

**STEP 2H: Student Organizations Provided to Students in the Program.**

Identify the CTSO associated with the program to be implemented by checking each box that applies, or specify if "Other" is selected.

<input type="checkbox"/> Educators Rising	<input type="checkbox"/> FBLA	<input type="checkbox"/> FFA	<input type="checkbox"/> SkillsUSA	<input type="checkbox"/> OTHER (specify):
Will the program be placed in schools that have the identified CTSOs?		<input type="checkbox"/> Yes	<input type="checkbox"/> No	

**STEP 3: Complete the Instructional Program Data Sheet**

Local School System (LSS) and Code:			
Name of CTE Local Director:		Phone:	
LSS Program Title:		CIP Code:	

**Program Options**

1.	
2.	
3.	
4.	

**Instructional Program Credit By Grade - Programs must be a minimum of three courses and three credits.**

Credits per year per program option as reflected by Course Sequences	Grade 9	Grade 10	Grade 11	Grade 12	TOTAL
1.					
2.					
3.					
4.					

Total number of credits for program completion: \_\_\_\_\_ (minimum of 3 credits)

**Career and Technical Education Program Sites**

Program Options	School Number	School Name	CTSO (Yes or No)

## Example

STEP 3: Instructional Program Data Sheet – Using the example provided as a model, complete the Program Data Sheet.			
Local School System (LSS) and Code:	ABC Public Schools		
Name of CTE Local Director:	Mr. John Q. Public	Phone :	301-555-1212
LSS Program Title:	<b>Business Management and Finance</b>	CIP Code:	<b>See Below</b>

Program Options	
1.	<b>Business Management (52.0251)</b>
2.	<b>Accounting (52.0354)</b>
3.	<b>Administrative Services (52.0451)</b>

Instructional Program Credit By Grade - Programs must be a minimum of three courses and three credits.					
Credits per year per program option as reflected by Course Sequences	Grade 9	Grade 10	Grade 11	Grade 12	TOTAL
1. <b>Business Management</b>		1	1	2	4
2. <b>Accounting</b>			2	2	4
3. <b>Administrative Services</b>		1	1	1	3

Total number of credits for program completion: \_\_\_\_\_ (minimum of 3 credits)

Career and Technical Education Program Sites			
Program Options	School Number	School Name	CTSO (Yes or No)
1	003050	Forest Hills High School	Yes
1,2	003044	Kennedy High School	No
2	003022	Park Avenue High School	No
3	003037	Island High School	Yes

**Policies and Procedures for the Development & Continuous Improvement of  
Career and Technical Education Programs of Study**

**Process for Amending Approved CTE Programs of Study**

This is the amendment process to be used when revising existing approved career and Technical education program proposals.

<b>Type of Amendment</b>	<b>Action Required</b>
Delete a site	<ul style="list-style-type: none"> <li>• Delete site through the List “A” verification process</li> </ul>
Add a site	<ul style="list-style-type: none"> <li>• A cover letter to the Director of Finance and Legislation with information about the type of amendment</li> <li>• A review and analysis of the Program Quality Index (PQI) for the program, along with Labor Market Demand</li> <li>• Evidence of approval by the local Program Advisory Committee (such as meeting minutes or co-signing the cover letter)</li> <li>• The Amended CTE Secondary Program Proposal Form</li> <li>• The Amended Instructional Program Data Sheet with the new sites listed</li> </ul>
Changes in the course sequence that results in the addition, upgrade or removal of any course included in the required credits identified for CTE program completion, as reflected in the Program Sequence Matrix	<ul style="list-style-type: none"> <li>• A cover letter to the Director of Finance and Legislation with information about the type of amendment</li> <li>• A review and analysis of the PQI for the program, along with Labor Market Demand</li> <li>• Evidence of approval by the local Program Advisory Committee (such as meeting minutes or co-signing the cover letter)</li> <li>• The Amended CTE Secondary Program Proposal Form</li> <li>• The Amended Program Sequence Matrix with the new course sequence listed, description of the courses, and revised program description if needed.</li> </ul>
Development of CTE program articulation agreements to award students early college credit	<ul style="list-style-type: none"> <li>• A cover letter to the Director of Finance and Legislation with information about the type of amendment</li> <li>• A review and analysis of the PQI for the program, along with Labor Market Demand</li> <li>• Evidence of approval by the local Program Advisory Committee (such as meeting minutes or co-signing the cover letter)</li> <li>• A copy of the articulation agreement</li> <li>• The Amended CTE Secondary Program Proposal Form</li> <li>• The Program Sequence Matrix, or the Amended Program Sequence Matrix, as applicable</li> <li>• The Amended Value-Added Options chart</li> </ul>

Once completed and signed, in **BLUE** ink, upload all documents to using the appropriate MSDE submission process in the appropriately named folder, i.e., Maryland CTE Programs of Study. Then send an email to Nina Roa at [nina.roa@maryland.gov](mailto:nina.roa@maryland.gov) and copy your Career Programs and Grants Specialist, indicating which document has been uploaded and is ready for routing and review.

**Uploaded documents showing the signatures in **BLUE** ink are considered originals and no copies need to be mailed. Otherwise, the documents requiring signature must be signed in **BLUE** ink and submitted through the mail to Nina Roa at:**

Nina Roa, Director of Finance and Legislation  
Maryland State Department of Education  
Division of Career and College Readiness  
200 West Baltimore Street  
Baltimore, Maryland 21201-2595

# Amended Approved CTE Programs of Study Program Proposal Form

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 (MSDE), and the local school system listed below.

Local School System Information					
Local School System (LSS) and Code:					
Name of CTE Local Director:		Phone:			
LSS Career Cluster:					
LSS Program Title:					
CIP - Use a CIP number from the approved list:		Program Options:	1.	2.	3.
Credentials For Technical Skill Attainment	<input type="checkbox"/> yes <input type="checkbox"/> no	This program provides students the opportunity to earn early college credit. The academic and technical course sequences for both secondary and postsecondary programs are included herein.			
	<input type="checkbox"/> yes <input type="checkbox"/> no	Enclosed is a copy of the articulation agreement (Copy required for CTE program approval if the program is articulated with a postsecondary education provider).			
	<input type="checkbox"/> yes <input type="checkbox"/> no	This program provides students with the opportunity to continue into or earn credit towards a registered apprenticeship			
	<input type="checkbox"/> yes <input type="checkbox"/> no	This program provides students with the opportunity to earn an industry-recognized credential. The credential is identified herein.			
Program Start Date:					
Signature of CTE Local Director:				Date:	

To Be Completed By MSDE/DCCR			
Program Received Date:			
CTE Control Number:		Fiscal Year:	
MSDE Cluster Title:			

**Approval Starts FY:** \_\_\_\_\_

\_\_\_\_\_  
 Signature, Director of Finance and Legislation for Career Programs

\_\_\_\_\_  
 Date

**AMENDED INSTRUCTIONAL PROGRAM DATA SHEET**

**STEP 3: Instructional Program Data Sheet – Using the example provided as a model, complete the Program Data Sheet.**

Local School System (LSS) and Code:			
Name of CTE Local Director:		Phone:	
LSS Program Title:		CIP Code:	

**Program Options**

1.	
2.	
3.	
4.	

**Instructional Program Credit By Grade - Programs must be a minimum of three courses and three credits.**

Credits per year per program option as reflected by Course Sequences	Grade 9	Grade 10	Grade 11	Grade 12	TOTAL
1.					
2.					
3.					
4.					

**Total number of credits for program completion: \_\_\_\_\_ (minimum of 3 credits)**

**Career and Technical Education Program Sites**

Program Options	School Number	School Name	CTSO (Yes or No)

## AMENDED PROGRAM SEQUENCE MATRIX

**STEP 2E:** Program Sequence Matrix (Include the program sequences that provide students with a route High School graduation, an Associate’s Degree, and/or a Bachelor’s Degree program) Identify the program options. Complete the matrix for the 9-12 CTE program of study, and the articulated program sequence in 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 CTE program matrix defines a planned, sequential program of study that consists of a minimum of three credits and three courses in CTE coursework in high school including work-based learning and/or industry-mentored projects. Work-based learning (WBL) 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 program and postsecondary linkages (e.g., dual enrollment, transcribed 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.

Technical Education or Advanced Technical Education and Personal Financial Literacy courses are not acceptable for credit in the career and Technical education program sequence.

**The LSS program title must be the same one that appears on the cover page. If more than one program option is offered in the program, complete a matrix for each program option (MSDE will insert the CIP number). Example: An IT program may include options in networking and programming.**

Program:			CIP Number (For MSDE Use)	
Graduation Requirements	Grade 9	Grade 10	Grade 11	Grade 12
English - 4				
Social Studies - 3				
Mathematics - 3 <i>Required Each Year</i>				
Science - 3				
Physical Education - .5 Health Education - .5				
Fine Arts - 1				
Computer Science, Engineering, or Technology Education - 1				
CTE Completer Program – 3 or more courses for a minimum total of 3 credits * Concentrator course				
World Language - 2				



**STEP 2E:** Program Sequence Matrix (Include the program sequences that provide students with a route High School graduation, an Associate's Degree, and/or a Bachelor's Degree program) Identify the program options. Complete the matrix for the 9-12 CTE program of study, and the articulated program sequence in 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.

Use the occupational titles from CIP-SOC Crosswalks found on the CTE Leaders Blackboard Site to provide a list of examples of careers students are preparing to enter and postsecondary options:

## AMENDED CREDENTIALS FOR TECHNICAL SKILL ATTAINMENT

**STEP 2F: CREDENTIALS FOR TECHNICAL SKILL ATTAINMENT** – Fill in the name of the partnering college or agency. Specify the credential that students will earn, and/or the number of college credits or hours granted. This information is required before a program can be designated as a **CTE articulated program of study**.

Option	Partner	Credential	College Credit
Dual Enrollment			
Transcripted Credit			
Articulated Credit			
Credit by Exam			
Advanced Placement			
Maryland Department of Labor State Skill Certificate			
Certifications			
License			
Degree			
Other Technical Skill Assessment (specify)			

AMENDED CREDENTIALS FOR TECHNICAL SKILL ATTAINMENT (CONTINUED)

**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. Section 2E must be completed before an articulated CTE program of study can be approved. A copy of the Articulation Agreement is also 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 articulated CTE program of study. Indicate which courses receive articulated or transcribed 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 examples of career options students are preparing to enter:**

**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 an articulated CTE program of study can be approved. A copy of the Articulation Agreement is also 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 articulated CTE program of study. Indicate which courses receive articulated or transcribed 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 examples of careers students are preparing to enter:**

## **Appendix A: DCCR Career Programs and Grants Specialists**

The DCCR Career Programs and Grants Specialists listed below are the first point of contact for the development of a new secondary CTE program proposal:

**Pamela Clay**                      **410-767-0175**    [pamela.clay@maryland.gov](mailto:pamela.clay@maryland.gov)

Caroline County Public Schools  
Chesapeake College  
Dorchester County Public Schools  
Kent County Public Schools  
Queen Anne’s County Public Schools

Somerset County Public Schools  
Talbot County Public Schools  
Wicomico County Public Schools  
Worcester County Public Schools  
Wor-Wic Community College

**Dean Kendall**                      **410- 767-0164**    [dean.kendall1@maryland.gov](mailto:dean.kendall1@maryland.gov)

Allegany County Public Schools  
Allegany College of Maryland  
Baltimore City Community College  
Baltimore City Public Schools  
Baltimore County Public Schools  
Carroll Community College  
Carroll County Public Schools  
Cecil County Public Schools

Community College of Baltimore County  
Garrett College  
Garrett County Public Schools  
Hagerstown Community College  
Harford Community College  
Harford County Public Schools  
Howard Community College  
Howard County Public Schools  
Washington County Public Schools

**Barbara Poindexter-Webb**    **410-767-0185**    [barbara.poindexter-webb1@maryland.gov](mailto:barbara.poindexter-webb1@maryland.gov)

Anne Arundel Community College  
Calvert County Public Schools  
Charles County Public Schools  
College of Southern Maryland  
Frederick Community College  
Frederick County Public Schools

Montgomery College  
Montgomery County Public Schools  
Prince George’s Community College  
St. Mary’s County Public Schools

**Traci Verzi**                      **410-767-0165**    [traci.verzi@maryland.gov](mailto:traci.verzi@maryland.gov)

Anne Arundel County Public Schools

Prince George’s County Public Schools

**Maryland State Department of Education  
Division of Career and College Readiness  
200 West Baltimore Street  
Baltimore, MD 21201-2595**

**Policies and Procedures for the Development & Continuous Improvement of  
Career and Technical Education Programs of Study**

**Appendix B: CTE Cluster Teams**

Career Programs and Grants Specialists are the first point of contact in the CTE program development and amendment process. Listed below are the members of each of the 10 career cluster teams:

Cluster Teams	
<b>Arts, Media and Communication</b> Marquita Friday & Jennifer Griffin	<b>Health and Bioscience</b> Nina Roa & Scott Nichols
<b>Business Management and Finance</b> Nicassia Belton	<b>Human Resource Services</b> Traci Verzi & Kellise Williamson
<b>Consumer Service, Hospitality and Tourism</b> Marquita Friday & Nina Roa	<b>Information Technology</b> Marquita Friday & Scott Nichols
<b>Construction and Development</b> Chuck Wallace	<b>Manufacturing, Engineering and Technology</b> Marquita Friday & Scott Nichols
<b>Environmental, Agriculture and Natural Resources</b> Dean Kendall	<b>Transportation Technologies</b> Charles Wallace
<b>Work-based Learning CTE Programs (Crosses All Clusters)</b> Jennifer Griffin	

**Policies and Procedures for the Development & Continuous Improvement of  
Career and Technical Education Programs of Study**

**Appendix C: Proposal Feedback Process**

<b>Local School System:</b>	
<b>Program Proposal Title:</b>	<b>Recommended for Panel approval:</b> <input type="checkbox"/> Yes <input type="checkbox"/> Yes with revisions <input type="checkbox"/> No
<b>MSDE Cluster Team:</b>	
<b><u>Feedback from Cluster Team</u></b>	
<b>Strengths/Commendations:</b>	
<b>Recommendations/Requested Revisions:</b>	
<b>Action required by the local school system if proposal <i>is recommended</i> for panel approval:</b>	
All revisions are due to Nina Roa, <a href="mailto:nina.roa@maryland.gov">nina.roa@maryland.gov</a> , by: _____. <i>If revisions are not received by this date, the panel will consider the proposal withdrawn and it will need to be resubmitted for the next panel meeting.</i>	
<b>Action required by the local school system if the proposal is <i>not recommended</i> for the panel:</b>	
<ol style="list-style-type: none"> <li>1. Notify Nina Roa, <a href="mailto:nina.roa@maryland.gov">nina.roa@maryland.gov</a>, by _____ to advise if the local will make requested revisions to the program proposal or will withdraw the proposal.</li> <li>2. If local school system (LSS) will make requested revisions, they are due to Nina Roa, <a href="mailto:nina.roa@maryland.gov">nina.roa@maryland.gov</a>, by _____.</li> </ol> <p>2a. Program proposal revisions not received by this date will cause the proposal to be considered withdrawn, and it will need to be resubmitted for the next panel meeting.</p>	

**Appendix D: Maryland CTE Programs of Study**

The same components that are found in a new CTE program proposal are included in proposals for Maryland CTE Programs of Study. The difference in these proposals is that staff members at the MSDE/DCCR have reviewed the programs against rigorous criteria. For programs that meet the criteria, DCCR staff members develop a consistent proposal for completion by the Local Director of CTE. Thus, the program achieves state approval in an expedited manner since an external partner, program provider, or other organization does most of the development steps.

The criteria for identifying Maryland CTE Programs of Study are shown in Figure 1. The form can be used to recommend potential programs. Local Directors of CTE are encouraged to recommend programs for review by MSDE cluster teams.

**Figure 1**

**Criteria to Identify Maryland CTE Programs of Study  
(for use by MSDE)**

Date:

Name of Evaluator:

Program Title:

Name of Telephone Contact:

Notes:



## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

MSDE uses the following criteria to inventory potential CTE programs. Supplement the inventory by contacting a representative of the sponsoring organization to discuss the program's potential. If available, evaluate the provider's website regarding the quality of the program information. The evaluation criteria assist in determining whether to recommend the program to the CTE Leadership Team for approval.

Yes	No	Criteria	
		<b>1. Standards-Based Curriculum</b>	
		a. Aligned to National Technical Skills Standards	Source:
		b. Aligned to Academic Standards	Source:
		c. Aligned to 21st Century Skills	Source:
		<b>2. Curriculum Development and Dissemination</b>	
		a. Frequently updated	How Often:
		b. Provides scope and sequence.	
		c. Includes Units, Lesson Plans, and Objectives.	
		d. Includes worksheets and PowerPoint presentations.	
		<b>3. Oversight/Quality Assurance</b>	
		a. Ensures that teachers remain current in the industry (ongoing interaction).	
		b. Requires a monitoring process to ensure quality of program implementation.	
		c. Requires annual review and revision.	
		d. Requires a program advisory committee.	
		<b>4. Industry and Postsecondary Credentials</b>	
		a. Leads to advanced placement in college through articulated credit, dual enrollment, transcribed college credit, or credit by examination.	
		b. Offers a valid and reliable end of course/program assessment.	
		c. Leads to a certificate, license, or other credential.	Identify:
		d. Includes work-based learning experiences or an industry-mentored culminating project.	
		<b>5. Professional Learning &amp; Technical Assistance to Teachers</b>	
		a. Requires orientation and professional learning to prepare teachers planning to teach.	Notes:
		b. Provides technical assistance throughout program implementation.	Notes:
		c. Conducts periodic refresher courses for teachers.	
		<b>6. Program Sustainability</b>	
		a. Includes cost estimates for program implementation.	
		b. Identifies start up and maintenance costs for equipment.	
		c. Includes estimate of annual ongoing costs for consumable materials and supplies.	

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

For items checked “no” – indicate ways to close the gaps in the space provided.

Staff Recommendations to the Career and Technical Education Leadership Team:

\_ Consider implementing the program as developed.

\_ The following enhancements are recommended before implementing this program:

Electronic copies of all Maryland CTE Programs of Study are available to download from [www.marylandpublicschools.org](http://www.marylandpublicschools.org). The contents of the proposals are consistent with the required components of a new CTE program. The DCCR will provide templates to CTE Local Directors for completion as Maryland CTE Programs of Study are developed.

Once completed and signed in **BLUE** ink, upload all documents to [DocuShare](#) in the appropriately named folder, i.e., Maryland CTE Programs of Study, Perkins Grant, Reserve Fund, etc. Then send an email to Nina Roa at [nina.roa@maryland.gov](mailto:nina.roa@maryland.gov), and copy your Career Programs and Grants Specialist, indicating which document has been uploaded and is ready for routing and review.

**Uploaded documents showing the signatures in BLUE ink are considered originals and no copies need to be mailed. Otherwise, the documents requiring signature must be signed in BLUE ink and submitted through the mail to Nina Roa at:**

Nina Roa  
Director, Finance and Legislation for Career Programs  
Maryland State Department of Education  
Division of Career and College Readiness  
200 West Baltimore Street  
Baltimore, Maryland 21201-2595

## Glossary

### All Aspects of the Industry

All aspects of the industry mean strong experience in, and comprehensive understanding of, different aspects of the industry that the individual is preparing to enter. Instruction should cover planning, management, finances, technical and production skills, underlying principles of Technical, labor issues, and health and safety as follows:

- Planning – various forms of ownership, including cooperatives and worker ownership, and the relationship of the industry to economic, political, and social context.
- Management – methods typically used to manage enterprises over time, methods for expanding and diversifying workers' tasks, and broadening worker involvement in decisions.
- Finance – ongoing accounting and financial decisions, and different methods for raising capital to start or expand enterprises.
- Technical and Production Skills – specific production techniques, alternative methods for organizing the production work, including methods which diversify and rotate workers' jobs.
- Underlying Principles of Technology – integrated study across the curriculum of the mathematical, scientific, social, and economic principles that underlie the Technical.
- Labor Issues – worker rights and responsibilities, labor unions and labor history, and methods for expanding workers' roles.
- Community Issues – the impact of the enterprise and the industry on the community, and the community's impact on and involvement with the enterprise.
- Health, Safety, and Environmental Issues – in relation to both the workers and the larger community.

### All Students

The term "all students" means both male and female students from a broad range of backgrounds and circumstances, including disadvantaged students, students with diverse racial ethnic, or cultural backgrounds, American Indians, Alaska Natives, Native Hawaiians, students with disabilities, students with limited English proficiency, migrant children, school dropouts, and academically-talented students.

### Apprenticeship (Registered)

See Work-Based Learning.

### Articulation Agreement

Articulation agreement means a written commitment as described in the Carl D. Perkins Career and Technical Education Act, 20 U.S.C §2301, et seq. In essence, the term "articulation agreement" means a written commitment that is agreed upon at the State level or approved annually by the lead administrators of: (1) a secondary institution and a postsecondary educational institution; or (2) a sub-baccalaureate degree granting postsecondary educational institution and a baccalaureate degree granting postsecondary educational institution and, to a program that is designed to provide students with a non-duplicative sequence of progressive achievement leading to technical skill proficiency, a credential, a certificate, or a degree; and linked through credit transfer agreements between the two institutions described in (1) and (2).

### Blended Instruction

Blended instruction is the integration of academic and occupational concepts to provide students with a more coherent program of study. Blended Instruction allows every student to participate in challenging and purposeful studies that blend theory and application. Every student will demonstrate

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

mastery of work-related and life skills required for a smooth transition into a globally competitive, technologically advanced, and service oriented society.

### **Career**

The sequence of occupations and other life roles that combine to express one's commitment to work in a person's total pattern of self-development (Super 1976). Each person has one lifelong career consisting of several occupations.

### **Career and Technical Education (or High Quality CTE)**

The term 'career and technical education' means organized educational activities that offer a sequence of courses that provides individuals with coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions. CTE programs provide technical skill proficiency, an industry-recognized credential, a certificate, or an associate degree; and may include prerequisite courses (other than a remedial course). CTE programs include applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of an industry, including entrepreneurship, of an individual.

### **Career and Technical Student Organizations (CTSO)**

Organizations for individuals enrolled in CTE programs that engage students in activities as an integral part of the instructional program. Such organizations may have state, national, and international units that aggregate the work and purposes of instruction in career and Technical education at the local level. Examples of DCCR-supported organizations are FBLA, FFA, and SkillsUSA as described in the *Policies and Procedures for Implementing Career and Technical Education Student Organizations*.

### **Career Guidance and Academic Counseling**

The term 'career guidance and academic counseling' means guidance and counseling that provides access for students (and parents, as appropriate) to information regarding career awareness and planning with respect to an individual's occupational and academic future; and provides information with respect to career options, financial aid, and postsecondary options, including baccalaureate degree programs.

### **Career Development**

Career Development is the process through which an individual comes to understand his/her place in the world of work including the psychological, sociological, educational, physical, economic, and chance factors that combine to influence the nature and significance of work in an individual's life.

### **Career Program/Major**

Career Program/Major means a planned sequence of courses, both academic and technical, in a program of study that prepares a student for further education and a career. As one of three elective programs to graduation in Maryland, a CTE program of study includes the course sequence from grades nine through 12 and two or more years of postsecondary education courses. The sequence of courses reflects the current state and local high school graduation requirements.

### **Career Management**

Career Management is the active and conscious participation in shaping one's career and accepting responsibility for the activities and choices made toward that end.

### **Career Portfolio**

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

Career Portfolio is a valuable tool to expand self-knowledge, promote informed career decision-making, help students and adults make connections between education and employability skills, and document their skills. The actual portfolio can take several forms, both electronic and paper. There are two broad types of career portfolios: those that have career development as their primary focus and those that have employability skill demonstration as their major focus.

A well-designed career development portfolio guides one through the career development process serving as a sequential career-planning journal. It is both a process and a product. Supporting activities are provided as part of a process that helps students and adults reflect on whom they are, make informed decisions, establish both career and educational goals, and craft a career plan for high school and beyond. The portfolio also contains some artifacts that showcase achievements and skills.

The skill demonstration or employment portfolio is a structured presentation of a person's skills, best work samples, awards, achievements, certifications, and letters of recommendation. It usually contains a resume. The skill demonstration portfolio is designed to support with documentation a student's comments during employment, college admission, and scholarship interviews.

### **CTE Participant**

The term "CTE participant" means an individual who completes not less than one course in a career and technical education program or program of study of an eligible recipient.

### **CTE Program Completer**

The term "CTE Completer" means a student who meets all requirements outlined in the State approved proposal for a CTE program of study.

### **CTE Program Concentrator**

The term "CTE Concentrator" means at the secondary school level, a student served by an eligible recipient who has completed at least two courses in a single career and technical education program or program of study. At the postsecondary level, it is a student enrolled in eligible recipient who has earned at least 12 credits within a career and technical education program or program of study; or completed such a program if the program encompasses fewer than 12 credits or the equivalent in total.

### **CTE Program Developers**

Anyone who works with the program advisory committee to develop high-quality CTE programs in accordance with the DCCR-prescribed process is a CTE program developer.

### **Career Exploration**

Career exploration is offered to assist students with career decision-making and facilitate the transition to postsecondary study and the world of work. Through planned activities, students assess career interests and work values; explore career clusters through interviews, job shadowing, speakers, and field trips; develop educational plans and course sequences; and develop resumes and portfolios to document educational and technical experiences needed to attain career goals.

### **Classification of Instructional Programs (CIP)**

The Classification of Instructional Programs (CIP) provide a taxonomic scheme that support the accurate titling, categorization, tracking, assessment and reporting of fields of study including career and technical education programs in Maryland. The full list of CIP codes developed by the U.S. Department of Education's National Center for Education Statistics (NCES) are available in electronic

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

format and can be found at [National Center for Education Statistics: The Classification of Instructional Programs \(CIP\) Codes](https://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55) found at URL: <https://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55>.

### Cluster Frameworks and Programs

Career and Technical education programs typically provide programs for students to pursue within one of Maryland's ten cluster areas:

1. Arts, Media and Communication
2. Business Management and Finance
3. Consumer Service, Hospitality and Tourism
4. Construction and Development
5. Environmental, Agricultural and Natural Resources
6. Health and Biosciences
7. Human Resource Services
8. Information Technology
9. Manufacturing, Engineering Technical
10. Transportation Technologies

A **career cluster** is a grouping of occupations and industries based on shared features or “core functions.” The cluster framework defines the scope of the industry, including the core business functions that are critical to the competitiveness and growth of the industry in Maryland. Career clusters provide a tool for schools to organize into small learning communities, academies, or magnet schools (through the use of programs).

**Career programs** are related programs of study that provide a multi-year sequence of career guidance, coursework, and work-based learning experiences that enable students to make more informed career choices. Programs are derived from the core functions of the cluster and include the major activities of each function.

**Career and Technical Education** programs of study are derived from the cluster framework and its accompanying pathways. Programs consist of a coherent sequence of secondary and postsecondary courses leading to a high school diploma, postsecondary degree, and/or an industry certification or credential.

Maryland's Ten Career Cluster Frameworks can be found at the following link: [Maryland High School Career and Technology Education Programs of Study 2019](http://marylandpublicschools.org/programs/Documents/CTEProgramsStudy/CTEProgramsofStudy2019.pdf) found at URL: <http://marylandpublicschools.org/programs/Documents/CTEProgramsStudy/CTEProgramsofStudy2019.pdf>

### Competency/Performance-Based Instruction

A methodology of instruction that: (1) identifies the competencies needed for on-the-job performance; (2) informs students and teachers of precise and detailed learning objectives required to complete these competencies; (3) emphasizes high performance standards in testing, course requirements; and (4) facilitates learning by letting each student master the tasks prior to advancing to another. Also known as performance-based instruction.

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

### **Credit by Examination**

Course or unit credit granted for demonstrated proficiency in a given area as determined by examination.

### **Dual Completer or Dual Completion**

Students who complete both a CTE approved program of study and meet the University System of Maryland's (USM's) admissions requirements are described as dual completers.

### **Eligible Recipient**

The term "eligible recipient" means (a) a local educational agency (including a public charter school that operates as a local educational agency), an area career and technical education school, an educational service agency, an Indian Tribe, Tribal organization or Tribal educational agency or a consortium, eligible to receive assistance under section 131; or an eligible institution or consortium of eligible institutions eligible to receive assistance under section 132 or (b) an eligible institution or consortium of eligible institutions eligible to receive assistance.

### **Employability Skills**

Employability skills are skills that are essential for job success, but are not necessarily linked to specific occupational knowledge. Sometimes called 21<sup>st</sup> Century Skills, employability skills refer to a broad set of knowledge, skills, work habits, and character traits that are believed to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplaces.

### **Every Student Succeeds Act (ESSA)/CTE Measures**

The ESSA plan has embedded CTE measures that support the School Quality/Student Success and Readiness for Postsecondary Success performance indicators for the state of Maryland. Students can meet measures for the School Quality/Student Success indicator by attaining concentrator status or higher. While the Readiness for Postsecondary Success indicator can be met in part by completing a youth or other apprenticeship program approved by the Maryland Apprenticeship Training Council (MATC); attaining CTE concentrator status and completing an industry certification aligned with an MSDE-approved CTE program; or completing an MSDE-approved CTE program. Pages 28 and 29 of Maryland's ESSA Plan describe more specifics about this and is accessed through this link: [Maryland Every Student Succeeds Act Consolidated State Plan](http://marylandpublicschools.org/about/Documents/ESSA/ESSAMDSUBMISSIONConsolidatedStatePlan091718.pdf) found at: <http://marylandpublicschools.org/about/Documents/ESSA/ESSAMDSUBMISSIONConsolidatedStatePlan091718.pdf>.

### **Industry-Mentored or Capstone Project**

The capstone project is typically completed as a culminating effort by students to demonstrate the cumulative learning that has occurred during the entire CTE program of study. Students work directly with industry mentors, as individuals or in teams, to receive advice and guidance in the development of their projects. Students in CTE may complete an industry-mentored project in addition to or instead of participating in a work-based learning experience.

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

### Industry-Recognized Credentials

An official document recognized by a profession that shows student mastery of the necessary skills to either enter into the profession and/or provide an advantage when entering a profession.

### Internship

See Work-Based Learning.

### Job

A job is a paid position with specific duties, tasks, and responsibilities in a particular place of work (e.g., photographer at ABC Pictures).

### Job Shadowing

Job shadowing, part of career exploration activities, is developmentally appropriate from kindergarten through adulthood. Through job shadowing, a student observes an employee to learn about a particular career cluster or industry. Job shadowing helps middle and elementary school students explore a range of career opportunities. Job shadowing experiences assist high school students with the exploration and selection of a career major. **Since job shadowing is exploratory in nature, it does not qualify for credit as a work-based learning experience as part of an approved CTE program.**

### Local Advisory Council (LAC)

The LAC is responsible for advising the overall system of CTE. Members participate in long-range, strategic planning to help position the system of CTE to obtain visibility, credibility, and resources. The LAC members review labor market demand data and assist the system in identifying critical shortage areas and economic development needs. Members of the LAC assist in determining which clusters to implement, which programs to offer/improve. They evaluate the program with an eye toward continuous improvement and provide annual report on the system's accomplishments and needs.

### CTE Local Application for Program Improvement

The Local CTE Perkins Application is a comprehensive plan, which describes how career and Technical education programs will be improved. This plan requires a thorough analysis of data and serves as the catalyst to identify program improvement strategies that will enable the school system or community college to achieve local performance targets. These targets are aligned with the core indicators of performance as required in the **Carl D. Perkins Act through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V)**. All available sources of revenue are listed, along with specific programs, identified by CIP number and sites where the programs are offered. In addition, this plan requires a description of the planned improvement, the desired outcomes, how the outcomes will be measured, and other required elements as described in the federal statute.

### List A (List of Approved Programs)

List "A" is the list of CTE programs offered by local school systems and community colleges and is tied to the Federal Government's CIP code system. **This list forms the basis of student enrollment and enrollment data processing by the MSDE. List "A" programs are eligible to use federal funds under the State Plan for Career and Technical Education and the Carl D. Perkins Act through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V). List "A" is verified on an annual basis to ensure that programs are added or deleted as needed.**

Secondary CTE programs of study are added to List "A" through an approval process described in the *Policies and Procedures for the Development and Continuous Improvement of Career and*



## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

*Technical Education Programs.* This includes state developed CTE programs of study as well as locally developed CTE programs of study that have been approved by the MSDE through the DCCR.

Postsecondary CTE programs of study are added to List “A” after the program has been approved by the Maryland Higher Education Commission and the community college requests that it be added. This includes certificate and degree programs in career and technical education (occupational) areas.

### Maryland CTE Programs of Study

A Maryland CTE Program of Study is a structured sequence of academic and CTE courses leading to a postsecondary-level credential and employment. It provides students with a planned, sequential program of study that blends academic, technical, and workplace skills to prepare them for careers and further education. Maryland CTE Programs of Study are based on the proposal development process with involvement by one or more of the cluster teams in DCCR and meets all or most of the criteria outlined in Appendix D. The cluster team leader convenes or endorses a design team consisting of employers as well as secondary and postsecondary educators. Approved CTE Programs of Study demonstrate the levels of accountability, structure, and support to ensure program quality and replication. The approval process is simplified for local CTE directors since the contents of the program are standardized. When local school systems adopt a Maryland CTE Program of Study, all of the program requirements must be adhered to without modification.

<b>Maryland Perkins IV Core Indicators of Performance – Secondary Level</b>	
<b>1S1:</b> Four-Year Graduation Rate	The percentage of CTE concentrators who graduate high school, as measured by the four-year adjusted cohort graduation rate (defined in section 8101 of the Elementary and Secondary Education Act of 1965).
<b>2S1:</b> Academic Proficiency in Reading/Language Arts	CTE concentrator proficiency in the challenging State academic standards adopted by the State under section 1111(b)(1) of the Elementary and Secondary Education Act of 1965, as measured by the academic assessments in reading/language arts as described in section 1111(b)(2) of such Act.
<b>2S2:</b> Academic Proficiency in Mathematics	CTE concentrator proficiency in the challenging State academic standards adopted by the State under section 1111(b)(1) of the Elementary and Secondary Education Act of 1965, as measured by the academic assessments in mathematics as described in section 1111(b)(2) of such Act.
<b>2S3:</b> Academic Proficiency in Science	CTE concentrator proficiency in the challenging State academic standards adopted by the State under section 1111(b)(1) of the Elementary and Secondary Education Act of 1965, as measured by the academic assessments in science as described in section 1111(b)(2) of such Act.

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

<b>Maryland Perkins IV Core Indicators of Performance – Secondary Level</b>	
<b>3S1:</b> Postsecondary Placement	The percentage of CTE concentrators who, in the second quarter after exiting from secondary education, are in postsecondary education or advanced training, military service or a service program that receives assistance under title I of the National and Community Service Act of 1990 (42 U.S.C. 12511 et seq.), are volunteers as described in section 5(a) of the Peace Corps Act (22 U.S.C. 2504(a)), or are employed.
<b>4S1:</b> Non-traditional Enrollment	The percentage of under-represented CTE concentrators in career and technical education programs and programs of study that lead to non-traditional fields.
<b>5S1:</b> Program Quality – Attained Recognized Postsecondary Credential	The percentage of CTE concentrators graduating from high school having attained a recognized postsecondary credential.
<b>5S4:</b> Program Quality – Technical Skill Attainment	The percentage of CTE concentrators who have met state-recognized CTE standards in the program, including assessments aligned to industry standards, if available and appropriate.

<b>Maryland Perkins V Core Indicators of Performance – Postsecondary Level</b>	
<b>1P1:</b> Postsecondary Retention and Placement	The percentage of CTE concentrators who, during the second quarter after program completion, remain enrolled in postsecondary education, are in advanced training, military service, or a service program that receives assistance under title I of the National and Community Service Act of 1990 (42 U.S.C. 12511 et seq.), are volunteers as described in section 5(a) of the Peace Corps Act (22 U.S.C. 2504(a)), or are placed or retained in employment.
<b>2P1:</b> Credential, Certificate or Degree	The percentage of CTE concentrators who receive a recognized postsecondary credential during participation in or within 1 year of program completion.
<b>3P1:</b> Non-traditional Program Enrollment	The percentage of CTE concentrators in career and technical education programs and programs of study that lead to non-traditional fields.

### **Occupation**

An occupation is a cluster of jobs with common characteristics and requiring similar skills (e.g., photographer).

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

### **Program Advisory Committees (PACs)**

PACs are composed of representatives of a cluster/pathway/program who can advise on the development of high-quality CTE programs that have enough breadth, depth, and academic rigor to constitute a complete program. Members must 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.

### **Reliable Assessments**

Assessment results must be both reliable and valid. An assessment is reliable if it yields results that are accurate and stable. A reliable assessment is one which consistently achieves the same results with the same (or similar) cohort of students. Reliability relates to the consistency of an assessment. A reliable assessment is one which consistently achieves the same results with the same (or similar) cohort of students. Various factors affect reliability – including ambiguous questions, too many options within a question paper, vague marking instructions and poorly trained markers.

### **School Courses for the Exchange of Data (SCED)**

School Courses for the Exchange of Data (SCED) is a voluntary, common classification system for prior-to-secondary and secondary school courses. It can be used to compare course information, maintain longitudinal data about student coursework, and efficiently exchange course-taking records. SCED is based on a five-digit Course Code that provides a basic structure for classifying course content. Additional SCED elements and attributes provide descriptive information about each course.

SCED is updated and maintained by a working group of federal, state and local education agency representatives who receive suggestions and assistance from a wide network of subject matter experts at the national, state, and local levels. As a result, SCED is designed to be flexible enough that education agencies can modify it to meet their needs. In Maryland, CTE SCEDs were uniquely created at MSDE for both state and local programs and were identified for CTE coursework.

### **21st Century Skills**

Sometimes called Employability Skills, 21<sup>st</sup> Century Skills refer to a broad set of knowledge, skills, work habits, and character traits that are believed to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplaces.

### **Sequence of Courses**

Indicates the planned sequence of courses, both academic and technical, in the program. This will include the sequence of courses from grades nine through 12, and for articulated CTE programs of study, the courses in the two- or four-year program of study. The secondary sequence of courses reflects the current state and local high school graduation requirements.

### **Skill Standards**

A skill standard specifies the knowledge and competencies required to perform successfully in the workplace. Standards are developed along a skill continuum ranging from general work readiness skills, and core skills or knowledge for an industry, to skills common to an occupational cluster, and specific occupational skills. Standards may cover basic and advanced academic competencies, employability competencies, and technical competencies. Development of these standards is tied to efforts to certify students' and workers' skills for a given career program.

### **Special Populations**

The term 'special populations' means individuals with disabilities; individuals from economically disadvantaged families, including low-income youth and adults; individuals preparing for non-traditional fields; single parents, including single pregnant women; out-of-workforce individuals; English learners; homeless individuals described in section 725 of the McKinney-Vento Homeless Assistance Act (42 U.S.C. 11434a); youth who are in, or have aged out of, the foster care system; and youth with a parent who is a member of the armed forces (as such term is defined in section 101(a)(4) of title 10, United States Code); and is on active duty (such as term is defined in section 101(d)(1) of such title).

### **Transcript**

An official document of courses taken showing the final grade received. Official transcripts must bear a seal of the college and signature of a designated college official.

### **Valid Assessment**

A valid assessment is one which measures what it is intended to measure. For example, it would not be valid to assess driving skills through a written test alone. A more valid way of assessing driving skills would be through a combination of tests that help determine what a driver knows, such as through a written test of driving knowledge, and what a driver is able to do, such as through a performance assessment of actual driving. Teachers frequently state that some examinations do not properly assess the syllabus upon which the examination is based; they are, in effect, questioning the validity of the exam. Assessment results must be both reliable and valid.

### **Work**

Work is a conscious effort aimed at producing goods or services for the benefit of self or others. Work may be paid or unpaid.

### **Work-Based Learning**

Activities at the high school and college levels that involve actual work experience and connect classroom learning to work. This is an all-encompassing term that includes: apprenticeships, cooperative education, and internships.

Supervised work-based learning (WBL) experiences are designed to provide meaningful work experience as an integral part of the regular career and Technical curricula. They require a partnership involving the education system, business and industry, community agencies and organizations, and the family.

Cooperative CTE is a method of education for students who, through written cooperative arrangements between a school and employers, receive instruction, including required rigorous and challenging academic courses and related CTE instruction, by alternating study in school with placement in a related career field. These experiences are organized around a training plan that is cooperatively developed by the school and employer to add value to and extend a student's career preparation. This instruction is planned, organized, and coordinated to assure that each component contributes to the student's education and employability. Cooperative education is provided in one of three major formats: capstone, integrated, and diversified. Diversified education has been revised and is a Maryland CTE Program of Study called Career Research and Development.

- Capstone WBL: The on-the-job component of the program is subsequent to the in school, skill development component. Students are placed at training sites that have the potential to extend and refine competencies that are developed in the in-school component.

## Policies and Procedures for the Development & Continuous Improvement of Career and Technical Education Programs of Study

- **Career Research and Development:** The major portion of skill development is provided through on-the-job work experience based on a training agreement (signed by the parent, student, employer, and work-based learning coordinator). The in-school component is concurrent with the on-the-job component and is general in nature rather than directly related to the occupation or placement. The program consists of at least two in-school credits and two on-the-job. The occupational placements are targeted employment opportunities for which an in-school career and Technical program does not exist. This option exists when CTE programs are over-enrolled or when a program is unavailable for students.
- **Integrated WBL:** The on-the-job component of the program is entered after some in-school skill development, and the in-school skill development component is maintained concurrent with on-the-job experience. Students are placed at training sites that have potential to complement the in-school component.
- **Internships:** Internships are short-term, paid or unpaid experiences that offer students a chance to work under the tutelage of employers and experience on-the-job training in a mentoring relationship. Students work with an employer to learn about a particular industry or career program. Workplace activities may include special projects, a sample of tasks from different jobs, or tasks from a single career program.
- **School-Sponsored or School-Based Enterprise or In-School Clinic:** A school-sponsored enterprise or clinic is an enterprise in which goods or services are produced by students as part of their school program. School-sponsored enterprises or clinics typically involve students in the management of a project that may involve the sale of goods or services for use by others. Enterprises may be undertaken on or off the school site, but are always part of the school's program.
- **Apprenticeship:** Apprenticeship is a voluntary, industry-driven program sponsored by employers, employer associations, and jointly by management and labor. An apprentice, as an employee, receives supervised, structured, on-the-job training combined with related technical instruction in a specific occupation. Apprenticeship is open to anyone age 16 or older; however, an employer may set a higher entry age. Individuals must be age 18 to apprentice in specified hazardous occupations. A training program must be at least 2,000 hours in duration to be considered as an apprenticeable occupation. The Maryland Apprenticeship and Training Council (MATC) is the registration agency for apprenticeship programs. The Apprenticeship and Training Council has approved and registered programs in 207 occupations.

For additional information, contact:  
Division of Labor and Industry  
Maryland Apprenticeship and Training Program  
1100 North Eutaw Street - Room 606  
Baltimore, MD 21201  
(410) 767-2246 Fax: (410) 767-2220  
e-mail: [matp@dllr.state.md.us](mailto:matp@dllr.state.md.us)