2016–17 OCTAE Customized Technical Assistance to States
Final Summary Report for the District of Columbia

CTE Data Collection: Program Map

The program map provides information on current career and technical education (CTE) course offerings at your school or local education agency (LEA).

1. LEA or IHE Information
   - School year: 2016-2017
   - Local education agency code

2. Current CTE Programs
   - Please review the list of CTE programs offered at your school/year. Add any programs offered this year that are not included in the list, but do not delete any programs. Once you have completed the list, please click on the "Create Program Worksheet" button below.
   - Follow the link to complete each program map.

3. Save and Submit
   - Please verify that all programs in the CTE program list at right are marked "incomplete." When you have finished, please save the workbook or share a copy of it to ssstaklis@rti.org.

Prepared under contract to
U.S. Department of Education

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August 2017
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_Prepared under contract to_
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**August 2017**
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Introduction

The U.S. Department of Education’s Office of Career, Technical, and Adult Education (OCTAE), Division of Adult and Technical Education sponsors technical assistance (TA) to states and grantees on an annual basis. This assistance is designed to motivate improvements to states’ career and technical education (CTE) data collection systems to help improve state and local programs and respond to *Carl D. Perkins Career and Technical Education Act of 2006* performance reporting requirements.

The District of Columbia’s Office of the State Superintendent of Education (OSSE) submits CTE student and program data to OCTAE each year through the federal Consolidated Annual Report system. Following OCTAE’s 2017 monitoring trip to OSSE, it was recommended that the District consider updating its reporting procedures to improve the reliability of its annual data submissions. Accordingly, OSSE staff requested TA support in developing a reference document that would formalize aspects of the data collection process and serve as a guide to local education agencies (LEAs) and institutions of higher education (IHEs) delivering CTE services. Following consultation with researchers at RTI International, who had contracted with OCTAE to provide TA support to the District (“the TA team”), OSSE concluded that a more comprehensive review of its CTE data collection materials and practices was needed.

The revised project plan focused on refining the District’s CTE data collection template, which is designed as an Excel workbook. This template is circulated to District LEAs, charter schools, and one IHE annually to gather information on CTE programs and courses offered at each site. Combined with student-level data gathered from a separate Excel template, these data are used to identify CTE students for the District’s annual Consolidated Annual Report. Since LEA/IHE data analysts are not always familiar with CTE terminology, a companion data dictionary was developed.

This report summarizes the revised CTE program map template and data dictionary developed as part of the TA effort. Rather than describing each TA product, which is fairly technical, the tools created by the TA team are included in a series of PowerPoint slides in appendix A (template) and appendix B (data dictionary excerpt). The informational slides were designed to accompany the program map template, serving both as a reference during annual presentations introducing the program map template and data collection process and as a standalone guide for LEA and IHE staff members as they complete the template. The following section offers a brief discussion of revisions to the template and the issues and considerations they are designed to address.
The CTE Program Map Template

The CTE program map template is a macro-enabled Excel workbook used by LEAs and the IHE to submit CTE program data on an annual basis (e.g., CTE programs offered at the institution, the sequence of courses that make up those programs, credits per course). The content of the revised template is largely based on templates from previous years. Project work to refine the template resulted in substantial format changes and the introduction of three features to streamline the data collection process. These included the addition of pre-populated program data to reduce local staff reporting burden; the creation of Excel macros to automate portions of the data input process; and the use of embedded instructions, offered as scroll-over pop-ups, to guide the user in entering information.

Pre-Populated CTE Program Data

One of the considerations guiding revisions to the CTE data collection template was the need to reduce the reporting burden on local staff and eliminate duplicative requests for data. Once the TA team identified a minimum set of data elements (i.e., variables) required to provide comprehensive program information, it compiled a District-wide CTE program dataset (see figure 1) that included all available course and program data from the last five years. Rather than entering data “from scratch” each year, LEAs/IHEs with current CTE program data on file are now asked to review their previous year’s program data, updating it as needed and adding any new programs or courses offered. The inclusion of these data within the program map template also formalizes and routinizes the capture of data from previous years, and it is expected that LEAs/IHEs will draw on these data to structure their reporting in each successive data collection cycle.
Automation Through Excel Macros

The program map template includes two Excel macros, which can be thought of as miniature computer programs (see figure 2). These programs (1) generate a list of CTE programs at a given LEA/IHE in response to user input and, once the user has added any new or missing programs to that list, (2) create a series of individual CTE program worksheets. These macros serve three goals: First, they complement the inclusion of pre-populated data by allowing LEA/IHE staff to select data relevant to their institution. Second, they divide the task of completing the program map into discrete and manageable subtasks, housed in separate worksheets, to allow users to review and update information on a program-by-program basis. Finally, they reduce duplicative requests for information by only asking for program-level information once, freeing LEA/IHE data specialists to focus on inputting course-level data.

Embedded Instructions

The CTE program map template includes tooltips (i.e., messages that appear when the user hovers his or her mouse over a specific portion of the document) offering brief instructions on how to complete the template. For example, columns within individual program worksheets might include a tooltip defining the variable and clarifying its purpose to the user (as in figure 3 or appendix A, slide 14). These abbreviated instructions are supplemented by more detailed definitions and instructions included in the PowerPoint slides that accompany the CTE program map template (appendix A) as well as a dedicated CTE data dictionary that was developed to accompany the template (an excerpt from this data dictionary is included in appendix B).
The CTE Data Dictionary

The CTE program map template is accompanied by a data dictionary that defines the data fields that LEA/IHE staff will populate or review when completing CTE program maps (see figure 4). This dictionary offers detailed explanations of key terminology and variables to assist data analysts in completing the template, along with more general information on CTE-related terms and concepts: CTE terminology can be confusing to LEA/IHE analysts who do not typically handle CTE-related data, and staff turnover in those positions can result in a loss of institutional knowledge that adversely affects CTE data collection.

There are 18 entries in the data dictionary relating to the CTE program map template, each corresponding to a field in the template. Each entry includes 14 components that define the components of each data element:

- **School Year**: The school year for which CTE program data are being collected.
- **Data Element Number**: A number assigned by OSSE to identify the data element (i.e., variable).
- **Data Element Name**: The name of the data element described in the entry (corresponding to field names in the CTE program map template).
- **Code**: Possible values that the data analyst may input in each field.
- **Definition**: Individual definitions of each code that the data analyst may input in each field.

---

**Figure 4: Excerpt from CTE data dictionary**

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition/Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>Name of the CTE program offered by the local education agency (LEA)</td>
</tr>
</tbody>
</table>
• **Location:** Where the data analyst who is completing the program map will encounter the data element—either on the “Cover Page” or within the “Program Map Worksheet.”

• **Type:** The data type of the element (i.e., string or float).

• **Length:** The maximum character length of data element codes.

• **Input method:** How the data analyst will input the data into the worksheet, whether by selecting from a dropdown list or manually entering the data (an “Automatic” input method is also included to describe pre-populated data that is locked to any edits by the LEA/IHE data analyst).

• **Year Implemented:** The year in which a data element was adopted.

• **Year Decommissioned:** When a previously used field was eliminated from the program map.

• **Source:** The source of data used to populate the program mapping template or a link to additional information about the data element.

• **Notes:** Additional details on data elements that are not captured by the previous components, used as needed.

• **LEA/IHE Notes:** A field data analysts/administrators may use to add additional notes that assist in the completion of the program map template (e.g., local data element names, LEA/IHE datasets from which analysts may draw to complete the program map template.).

An excerpt from the CTE program map data dictionary is included in appendix B.

### Summary

The revised data collection materials that OSSE and the TA team developed through the TA project lay groundwork for a more consistent and reliable data collection process. This process will become simpler and more streamlined as the data submitted through the template on an annual basis are used to pre-populate the template in subsequent years. This will save staff time and resources at the District, LEA, and IHE levels while improving data quality.
Appendix A: CTE Program Map Reference

District of Columbia Career and Technical Education Program Map Reference

District of Columbia Office of the State Superintendent of Education (OSSE)

June 13, 2017

Steve Klein
Jon Bayette
In This Presentation

Background
CTE data collection: purpose and process

Program Map Template
How to complete the template

Reference materials
CTE Data Dictionary
Background: CTE Data Collection

Purpose
Schools, local education agencies (LEAs), and institutions of higher education (IHEs) that receive federal or state CTE funding are required to submit CTE program data every year for purposes of accountability and program improvement.

Process
Each year, the DC Office of the State Superintendent of Education (OSSE) distributes two data collection workbooks for schools/LEAs/IHEs to complete:

- Program Map Template: Provides a record of CTE programs and courses offered
- Student Data Template: Provides a record of CTE students and student performance

OSSE’s Office of Data, Accountability and Research (DAR) analyzes the data that schools/LEAs/IHEs provide and compiles them for annual reports.
The Program Map Template

What is the Program Map Template?
- An Excel workbook into which LEAs enter (or verify) information on CTE programs that they offer
- Includes macros to automate the data collection; these are activated by buttons in the workbook
- Pre-populated with the most up-to-date CTE program data available
- LEAs/IHEs are asked to review those data and confirm, correct, or update them as needed
The Program Map Template

When opening the document, you may encounter a message box (or boxes) as shown below. Please click as the red circles indicate:
The Program Map Template

The document opens to the “Cover Page,” shown below.
The Program Map Template

In the box marked “1. LEA Information”, you are asked to select the name of your LEA from a dropdown list, as below:

A

B

C

Once you have selected your LEA, click on the "Create CTE Program List" button.
The Program Map Template

Clicking “Create CTE Program List” will generate a list of last year’s CTE programs in the box marked “2. Current CTE Programs.”

If no programs appear in the list, OSSE may not have a previous year’s program map on file for your LEA/IHE.

If you offered any CTE programs this year that are not listed, please add them to the list. However, do not delete any CTE programs that are no longer offered, or change any program names. (If a program name has changed, you will note that in the “Program Notes” column.)

Once your CTE program list is complete, please click “Create Program Worksheets” (circled). This will create individual program worksheets for each CTE program listed.
The Program Map Template

After you click the “Create Program Worksheets” button, hyperlinks will be added to each of the programs listed.

### 2. Current CTE Programs

Please review the list of CTE programs offered at District of Columbia Public Schools last year. Add any programs offered this year that are not included in the list, but do not delete any programs. Once you have completed the list, please click on the 'Create Program Worksheets' button below.

Then follow the links to complete each program map.

<table>
<thead>
<tr>
<th>CTE Program</th>
<th>Program Map Status</th>
<th>Program Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture &amp; Design</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Biomedical Sciences</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Biotechnology</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Business Administration</td>
<td>Incomplete</td>
<td></td>
</tr>
</tbody>
</table>

All programs are marked “Incomplete” by default. While you cannot change this status on the cover page, you can change it within individual program worksheets.

Follow the links to complete individual CTE program worksheets.

In the following example, we will follow the link for the “Architecture & Design” program to the associated program worksheet.
The Program Map Template

Clicking the hyperlink takes you to the Architecture & Design program worksheet

Follow the instructions provided to complete the program worksheet.
The Program Map Template

Note: The “Last Year Offered” field (encircled below) is where LEAs/IHEs will make note of courses that are no longer offered.

Where course data are included in the program worksheet, these are based on the previous year’s program map submission.

If a course is no longer offered, note that by indicating the last school year that the program was offered.
The Program Map Template

Note: The “General Education” column is intended to flag courses that may be taken to fulfill graduation requirements.

Students may often take CTE courses that satisfy graduation requirements without intending to complete a CTE program of study.

These students may inflate the count of CTE participants in annual reports, contributing to the impression that CTE programs are “losing” those students when they do not go on to complete a CTE program.

This field will help to flag students that only took CTE courses that counted toward graduation.
The Program Map Template

Note: The “Course Notes” column is provided to gather important information on CTE programs/courses that is not captured in the other columns.

If a course is optional, or if may be substituted for another to satisfy CTE program requirements, enter this information in the “Course Notes” column.

You may also include additional information relevant to the identification of CTE students.
The Program Map Template

Hover your mouse over column headers to reveal instructional tool-tips.

<table>
<thead>
<tr>
<th>CTE Program</th>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits for Course</th>
<th>Program Credits</th>
<th>Program Credits:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture &amp; Design</td>
<td>IA1</td>
<td>Architecture &amp; Design I</td>
<td>1</td>
<td>4</td>
<td>Please verify or enter the number of credits required to complete the CTE program.</td>
</tr>
<tr>
<td>Architecture &amp; Design</td>
<td>IA2</td>
<td>Architecture &amp; Design II</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Architecture &amp; Design</td>
<td>IA3</td>
<td>Architecture &amp; Design III</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Architecture &amp; Design</td>
<td>IA4</td>
<td>Architecture &amp; Design IV</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Architecture &amp; Design</td>
<td>IL1</td>
<td>Landscape Architecture</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>IL2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DC CTE Data Task Force
The Program Map Template

When you have made all necessary changes to an individual CTE program worksheet, select from the “Program Map Status” dropdown list.

- Incomplete: program map has not been completed (default)
- No Change: there have been no changes to the courses or program
- Changes to Courses; No Change to Program Name: there have been changes to the program courses, and these have been entered. The program name has not changed.
- No Change to Courses; Changes to Program Name: There have been no changes to the courses offered, but the program name has changed (you will enter the new name on the Cover Page in the “Notes” column).
- Changes to Courses and Program Name: There have been changes to both the program courses and program name. Edits to course information are made within the program worksheet; the new course name is noted on the Cover Page.
- No Longer Offered: the CTE program, as a whole, is no longer offered
- New Program: this is a new CTE program
The Program Map Template

Finally, return to the Cover Page by clicking the appropriate link:

CTE Data Collection: Program Map

The program map provides information on career and technical education programs. Please verify or enter courses offered within this CTE program. If it was offered in the "Last Year Offered" column, if any changes were made to the program compared to the previous year but there has been a change to the program this year, please select "No Longer Offered" from the dropdown menu. If there have been changes, please make the necessary revisions to the program map. Click to Return to Cover Page.
The Program Map Template

Click links to complete any CTE program worksheets still marked “Incomplete”

### 2. Current CTE Programs

<table>
<thead>
<tr>
<th>CTE Program</th>
<th>Program Map Status</th>
<th>Program Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture &amp; Design</td>
<td>No Change</td>
<td></td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Biomedical Sciences</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Blockchain</td>
<td>Incomplete</td>
<td></td>
</tr>
<tr>
<td>Business Administration</td>
<td>Incomplete</td>
<td></td>
</tr>
</tbody>
</table>

As you change the program map status within the CTE program worksheets, these changes are reflected on the Cover Page.

Please add general notes on the CTE program in the “Program Notes” column. (Example: If there has been a change in program name, type “Name changed to [enter new program name]” in the notes column.)
The Program Map Template

When you have made all necessary changes to CTE program worksheets, and no programs are marked “Incomplete,” you are finished.

3. Save and Submit

Please verify that no programs in the CTE program list at right are marked “Incomplete”. When you have finished, please save the workbook and send it to the Office of Data, Accountability and Research at OSSE.

Please save the worksheet as DC_YYYY_ProgramMap_[Your LEA/IHE].xlsx.

Example: DC_1617_ProgramMap_DCPS.xlsx

Send completed program maps to the Office of Data, Accountability and Research at OSSE.

Note that OSSE staff may contact you with any follow-up or clarifying questions.
The Program Map Template

Known limitation for Mac Users: While you can open and use the template, you must save it with the “.xlsx” file extension rather than “.xlsm”, otherwise the file will become corrupted. This means that you will not be able to use the macros once you save it.

If you plan to use a Mac to complete the program map, please be sure that you complete all steps on slides 7 through 9 before saving the template as an “.xlsx” file, and that you have included all relevant CTE programs. You will not be able to create new program map worksheets automatically once the file is saved under the new format.

When saving, select “Save As” and save as type “Excel Workbook (*.xlsx),” as shown left.
Reference Materials

This PowerPoint slide deck has been provided as a reference to schools/LEAs as they complete the CTE Program Map Template.

In addition, schools/LEAs may refer to the District of Columbia’s Career and Technical Education Data Dictionary. This document provides detailed definitions of data elements and values included in the CTE Program Map Template. The data dictionary also includes a field for schools, LEAs, and IHEs to add local variable names that correspond to fields in the CTE Program Map.
Dr. Steve Klein
Director
Center for Career & Adult Education and Workforce Development
RTI International
503-428-5671
sklein@rti.org

Thank you!

Jon Boyette
Education Analyst
RTI International
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jboyette@rti.org
Appendix B: CTE Data Dictionary Excerpt

Note: This excerpt includes the title page, table of contents, and list of data elements included in the 2016-17 District of Columbia CTE Data Dictionary, along with one sample dictionary entry: Program Map Status.

2016-17 District of Columbia Career and Technical Education Data Dictionary

OFFICE OF THE STATE SUPERINTENDENT OF EDUCATION (OSSE) DIVISION OF DATA, ASSESSMENT AND RESEARCH (DAR) 810 1ST STREET NE, NINTH FLOOR WASHINGTON, D.C. 20002
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Note: Some data elements are included both on the Cover Page and in the Program Map Worksheet.
### Data Dictionary Elements

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Element Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cover Page Data Elements</strong></td>
<td></td>
</tr>
<tr>
<td>School Year</td>
<td>cte001</td>
</tr>
<tr>
<td>Local Education Agency (LEA) Code</td>
<td>cte002</td>
</tr>
<tr>
<td>Local Education Agency (LEA) Name</td>
<td>cte003</td>
</tr>
<tr>
<td>Career and Technical Education (CTE) Program</td>
<td>cte004</td>
</tr>
<tr>
<td>Program Map Status</td>
<td>cte005</td>
</tr>
<tr>
<td>Program Notes</td>
<td>cte006</td>
</tr>
<tr>
<td><strong>Program Map Worksheet Data Elements</strong></td>
<td></td>
</tr>
<tr>
<td>Program Map Status</td>
<td>cte007</td>
</tr>
<tr>
<td>Local Education Agency (LEA) Name</td>
<td>cte008</td>
</tr>
<tr>
<td>Career Cluster</td>
<td>cte009</td>
</tr>
<tr>
<td>Career and Technical Education (CTE) Program</td>
<td>cte010</td>
</tr>
<tr>
<td>Course Code</td>
<td>cte011</td>
</tr>
<tr>
<td>Course Name</td>
<td>cte012</td>
</tr>
<tr>
<td>Credits for Course</td>
<td>cte013</td>
</tr>
<tr>
<td>Program Credits</td>
<td>cte014</td>
</tr>
<tr>
<td>Sequence</td>
<td>cte015</td>
</tr>
<tr>
<td>General Education</td>
<td>cte016</td>
</tr>
<tr>
<td>Last Year Offered</td>
<td>cte017</td>
</tr>
<tr>
<td>Course Notes</td>
<td>cte018</td>
</tr>
</tbody>
</table>
Program Map Status

**School Year:** 2016-17

**Data Element Number:** cte005

**Data Element Name:** Program Map Status

Indicates the status of the program map and CTE program (default is "Incomplete")

<table>
<thead>
<tr>
<th>Code</th>
<th>Definition/Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete</td>
<td>The program map has not been completed (default).</td>
</tr>
<tr>
<td>No Change</td>
<td>There have been no changes to the courses or program, or program name, since the prior year.</td>
</tr>
<tr>
<td>Changes to Courses; No Change to Program Name</td>
<td>There have been changes to the program courses, and these have been entered. The program name has not changed.</td>
</tr>
<tr>
<td>No Change to Courses; Changes to Program Name</td>
<td>There have been no changes to the courses offered or their format, but the program name has changed.</td>
</tr>
<tr>
<td>Changes to Courses and Program Name</td>
<td>There have been changes to both the program courses and program name.</td>
</tr>
<tr>
<td>No Longer Offered</td>
<td>The CTE program, as a whole, is no longer offered.</td>
</tr>
<tr>
<td>New Program</td>
<td>This is a new CTE program.</td>
</tr>
</tbody>
</table>

**Location**

- Cover Page

**Type**

- String

**Length (Maximum)**

- 47

**Input Method**

- Automatic (Cover Page), dropdown (Program Map Worksheet)

**Year Implemented**

- 2016-17

**Year Decommissioned Source**

- N/A

- N/A
Notes

This field appears both on the Cover Page and within individual program map worksheets. The field is automatically populated on the Cover Page, based on user entry in the program map worksheet.

Local education agency (LEA) notes