

Background

On July 31, 2018, the federal government passed the Public Law 115-224, known as Perkins V. This act requires career and technical education (CTE) reporting to be “valid, and reliable, and comparable across the State.” Moreover, the act necessitates new participation values that provide more detail about the type and depth of a student’s CTE coursework. TEA is required to report student CTE participation by “career clusters,” to meet the Perkins V legislative requirements.

To meet this legislative need for consistency, reliability, and granularity, TEA implemented a CTE Indicator autocalculation process that uses a student’s course completion data collected in the PEIMS Summer (SUMR) Submission starting in the 2020-2021 school year to derive each CTE participant’s classification. The automated process replaced the manual process that used to be the responsibility of the individual LEAs.

The purpose of this document is to provide LEAs and vendors with a summary of the logic that TEA uses to determine the CTE Indicator Codes for students participating in Career and Technology programs.

Legislation

[The Strengthening Career and Technical Education for the 21st Century Act \(Public Law 115-224\)](#) (Perkins V, the Act, or statute), which reauthorized and amended the Carl D. Perkins Career and Technical Education Act of 2006.

Definitions, Acronyms, and Abbreviations

Note: The five CTE indicators are defined in the “Table Values” section.

Career Clusters – a grouping of occupations and broad industries based on commonalities.

Credit Value – a value used to calculate the number of credits associated with a given course, based on highest of the values for each course in the C022 table.

CTE – career and technical education - career preparation programs that prepare workers to meet employers’ needs in a variety of occupations.

CY – current year

LEA – Local Education Agency. A public school district or open enrollment charter school. Texas has over 1,200 LEAs.

Perkins – the Carl D. Perkins Career and Technical Education Act of 1984 (reauthorized in 1990, 1998, 2006, and 2018) – instituted to provide an increased focus on the academic achievement of career and technical education students, strengthen the connections between secondary and postsecondary education, and improve state and local accountability.

Program of Study (POS) – sequences of academic and CTE coursework to help students attain a postsecondary degree or industry-recognized certificate or credential, as defined in the Perkins grant legislation.

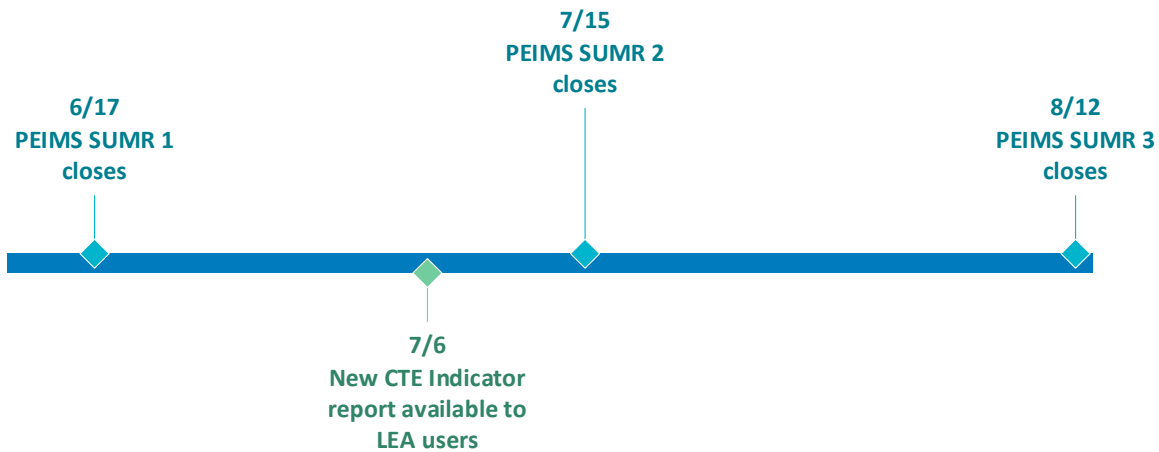
Service ID – an identifier for the services supplied by staff.

UID – a unique number assigned to a student or staff member by the Texas Education Agency.

CTE Autocalculation Illustrations

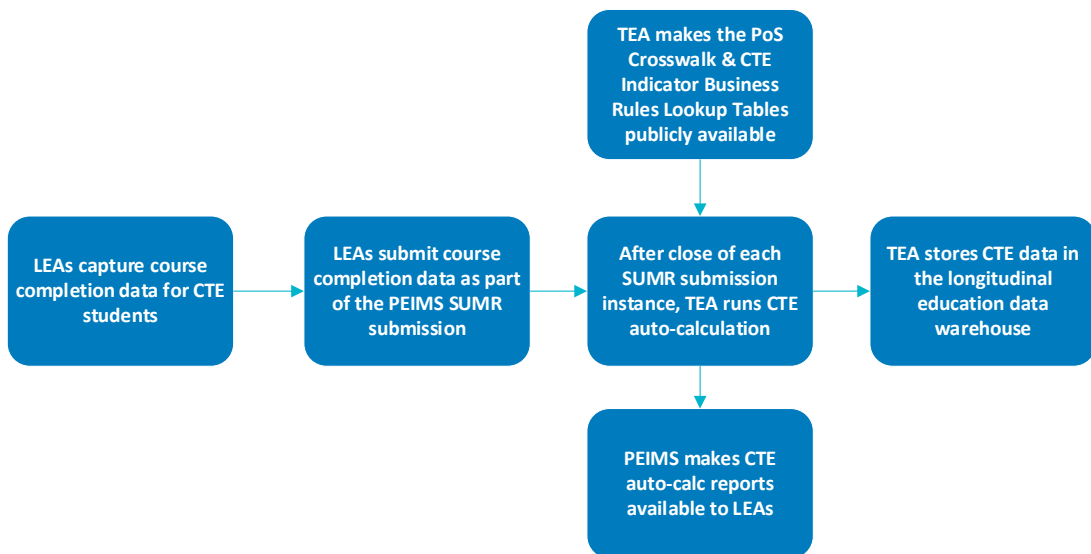
CTE Auto-calculation Timeline

The CTE autocalculation is part of the PEIMS Summer Submission process. The timeline below shows approximate annual dates for critical events in this process. See the [Submission Timelines](#) in the Texas Education Data Standards for exact dates for a particular school year.



CTE Auto-calculation Process

The diagram below illustrates the CTE autocalculation inputs, outputs, and process.



Inputs

The inputs for this calculation are:

- PEIMS SUMR Submission
- 20xx-20yy CTE Indicator Business Rules Look-up Tables.xlsx
 - Tab: C220 Programs of Study
 - Tab: POS Service ID Level Credit
 - Tab: Federal Career Cluster IDs
 - Tab: State Career Cluster IDs
 - Tab: C135 Values
 - Tab: C136 Values
 - Tab: POS Region Crosswalk

TEA updates these spreadsheets annually and makes them publicly available annually in March.

Formulas/Logic

The data for used for these calculations is the certified PEIMS SUMR submission data.

Logic for identifying students and school years to include:

1. **Identify the student population to evaluate for the current year’s CTE calculation:**
 Include all students who:
 - completed **one or more courses** (of any kind—not necessarily CTE) in grades 6 – 12 in the current year’s PEIMS SUMR data **OR**
 - did not have course completion data in SUMR but were **in attendance** at any time in the current school year

2. **Identify which school years’ data to evaluate for the students in each grade cohorts:**
 Find course completion records for each year indicated for students in grades 6 – 12 in the table below:

Grade-Level at End of 2020-2021 School Year	In 2021, Select Records from These School Years	Formula to Select School Years after 2021
12	2020-2021	Current Year (CY)
	2019-2020	CY minus 1
	2018-2019	CY minus 2
	2017-2018	CY minus 3
	2016-2017	CY minus 4
	2015-2016	CY minus 5
	2014-2015	CY minus 6
11	2020-2021	CY
	2019-2020	CY minus 1

	2018-2019	CY minus 2
	2017-2018	CY minus 3
	2016-2017	CY minus 4
	2015-2016	CY minus 5
10	2020-2021	CY
	2019-2020	CY minus 1
	2018-2019	CY minus 2
	2017-2018	CY minus 3
	2016-2017	CY minus 4
9	2020-2021	CY
	2019-2020	CY minus 1
	2018-2019	CY minus 2
	2017-2018	CY minus 3
8	2020-2021	CY
	2019-2020	CY minus 1
	2018-2019	CY minus 2
7	2020-2021	CY
	2019-2020	CY minus 1
6	2020-2021	CY

NOTE: The system will use the school years identified above for all students, including those who have repeated or skipped one or more grades, to determine which records to evaluate.

3. Identify students with no relevant CTE Service IDs and assign them a 4:

- Match the course completion records for all grades and years above to the **current year POS Service ID Level Credit lookup table OR the Non-POS CTE Service IDs table**. (Service IDs with a POS count toward CTE Indicator codes 5, E, 6, and 7, while Service IDs without a POS only count toward CTE Indicator codes 5 and E). Identify any students who do not have any Course Sequence Code of 0, 2, 5, 9, D0, D2, D5, or D9 for any CTE Service ID. (Students with the specified Course Sequence Codes will be evaluated further in steps 4 and beyond below). Students without the specified course sequence codes are assigned a CTE value of “4” and are excluded from the remaining logic below.
- For students who were in attendance in the current year but have no course completions AND did not have any CTE course completions in any prior years (grades 6-12), assign a code value of “4”.

4. Perform the CTE logic below on the remaining students.

Multiple Instances of Same Service ID/Course Sequence Code/Pass-Fail Indicator

If more than one course completion record for a student has the same Service ID, Course Sequence Code and Pass/Fail Indicator values, only keep the first occurrence of this record. Some service IDs may

have multiple Programs of Study and corresponding credit values, state career cluster values, and federal career cluster values.¹

Determining LEAs/Campuses/Grade Levels per Year

LEAs

To determine the LEA for a student, the system shall associate the student only with the LEA that corresponds to their **most recent course completion** record from the school year for which the SUMR data was submitted (regardless of CTE participation at that LEA).² To determine a student's LEA, the system shall find the LEA ID that corresponds to the most recent student begin date for course completion.

For any students who don't have any course completion data for the current school year, use the LEA ID that is associated with the latest reporting period for the student's **attendance** record. If more than one LEA is associated with the latest reporting period, use the **numerically largest** LEA ID number as the student's LEA.³

Campuses

Similarly, to determine the campus for a student, the system shall associate the student only with the campus that corresponds to their **most recent course completion** record from the school year for which the SUMR data was submitted (regardless of CTE participation at that campus).⁴ To determine a student's campus, the system shall find the Campus ID that corresponds to the most recent student begin date for course completion.

For any students who don't have any course completion data for the current school year, use the Campus ID that is associated with the latest reporting period for the student's **attendance** record.

If more than one campus is associated with the latest reporting period, use the **numerically largest** Campus ID number as the student's LEA.

Grade Level

To determine the grade level for a student, the system shall find the grade level value that corresponds to the most recent student begin date for course completion from the school year for which the SUMR data was submitted (regardless of CTE participation). For any students who don't have a course completion record for the current school year, use the grade level associated with the LEA you identified above.

¹ For example, the course *Medical Terminology I* corresponds to *three* Programs of Study (Health Informatics; Medical Therapy; & Healthcare Diagnostics). In this case, the system would write three records for the single Service ID – one for each Program of Study.

² For example, Alonzo completed a CTE course in Fall in Frognot ISD. His most recent course completion was at Bugscuffle ISD for the Spring semester, where he did NOT take a CTE course. The CTE indicator is credited to Bugscuffle ISD.

³ Note that this is a stopgap solution until ODS 3.x is implemented, at which point we will be able to use effective dating to determine the last LEA/campus attended accurately.

⁴ For example, Alonzo completed a CTE course in Fall at the Blackland Academy of the Sciences. His most recent course completion was at the Crosstimbers School for the Fine Arts for the Spring semester, where he did NOT take a CTE course. The CTE indicator is credited to Crosstimbers School for the Fine Arts.

Logic for calculating CTE Indicator and Program of Study ID

Table Values⁵

Code	Title	Definition
4	Not CTE	A student who never enrolled or who did not complete any high-school CTE course as defined by 19 TAC Chapter 126 (C), 127 (B) or 130.
5	CTE Participant ⁶	A student completing EITHER: <ul style="list-style-type: none"> Only one CTE course for any number of credits OR More than one course for less than two credits where a CTE course is defined by 19 TAC 126 (C), Chapter 127 (B) or 130 (the student does not have to pass or receive credit).
E	CTE Explorer	A student completing two or more high school CTE courses for a total of two or more credits defined by 19 Chapter (C), 127 (B) or 130 and not a participant, concentrator, or completer (the student does not have to pass or receive credit).
6	CTE Concentrator	A student completing and passing two or more chapter 126 (C), 127 (B) or 130 CTE courses for a total of at least two credits within the same program of study and not a completer in the same program of study.
7	CTE Completer	A student completing and passing three or more chapter 126 (C), 127 (B) or 130 CTE courses for 4 or more credits within a program of study, including one level 3 or level 4 course from within the same program of study.

1. Go through the logic for Code 7 first:

Use the POS Service ID Level Credit lookup table (which was added to TEDS in 2019-2020, is updated annually, and lists all of the approved statewide and regional programs of study and their unique identifier codes) to identify students completing three or more courses (service IDs) for four or more credits in the *same program of study*, with at least one course being a level 3 or 4; Pass/Fail Indicator must equal 1 or 8 – assign CTE Indicator “7”. Record the Program of Study ID for every instance of a unique Program of Study.

Note: The credits are determined from the course units in the [Service-ID C022 table](#), not from the credits awarded by the district on the transcript. If there is a range of credits, use the highest value in the range.

Note 2: A small set of Service IDs do not have a program of study. These courses (which are documented in the Non-POS CTE Service IDs table in the 20XX-20XY CTE Indicator Business Rules Look-

⁵ In 2019-2020 and previous school years, the “Tech Apps” courses in some programs of study are documented in TAC Chapter 126 (C). Starting with the 2020-2021 school year and beyond, the Tech Apps courses are located in TAC Chapter 130 with the same PEIMS service ID numbers.

⁶ The definition of a “5” is being updated in TEDS to clarify how to handle students completing a single course for two or more credits. The definition above will be included in the next 2021-2022 TEDS release.

up Tables.xlsx) count toward the E and 5 CTE indicator values, **but do not** count toward indicators 6 or 7.

2. Next go through logic for Code 6:

Use the current year C022 service ID lookup table to identify students completing two or more courses (service IDs) for at least two credits within the *same program of study*; Pass/Fail Indicator must equal 1 or 8 – assign CTE Indicator “6”. Record the Program of Study ID for every instance of a unique Program of Study. (Do not assign a “6” for the Program of Study if a “7” was already for that Program of Study.)

3. Next go through logic for Code E:

Identify students who are not a “7” or “6” but who have two or more courses (Service IDs) in the current year POS Service ID Level Credit service ID lookup table **OR** the Non-POS CTE Service IDs table. The students’ Pass/Fail Indicator can be any value – assign CTE Indicator “E”. Do not write a Program of Study value.

(See Note on step 1 for more information on non-POS CTE Service IDs.)

Note: There is one exception to the E indicator not having a Program of Study – see regional indicator requirement, section “Logic for populating corresponding Program of Study Indicator”, 1.d.ii.

4. Next go through logic for Code 5:

Student completing EITHER:

- Only one CTE course (Service ID) for any number of credits
- OR**
- More than one course (Service ID) for less than two credits

Where the Service IDs are present in the current year POS Service ID Level Credit lookup table **OR** the Non-POS CTE Service IDs table; Pass/Fail Indicator may be any value – write CTE Indicator “5”. Do not write a Program of Study value.

At this point, all students will have a CTE Indicator code.

5. Next populate the column Statewide or Regional Program of Study Indicator:

Use the C220 PROGRAM-OF-STUDY-CODE code table to identify the Statewide or Regional Program of Study Indicator.

Multiple Instances of CTE Indicator Codes

The same student may have more than one CTE indicator code. First, identify every instance where the student qualifies for CTE Indicator Code 7 in a unique Program of Study. Next, identify every instance where the student qualifies for CTE Indicator Code 6 in a unique Program of Study and did not also qualify as a CTE Indicator Code 7 in the same Program of Study.

Calculating across Years and Programs of Study

When calculating course credits for Service IDs corresponding to a 6 or 7, sum credits from all school years within the same Program of Study. If a Service ID corresponds to a 5 or E, course credits are calculated across all school years **and** all Programs of Study.

Logic for identifying corresponding Program of Study Indicator (S or F), State Career Cluster ID, Federal Career Cluster ID; and School Year

1. Based on the Program Study ID that was determined above and the logic below, identify the corresponding Program of Study Indicator, Statewide or Regional Program of Study Indicator, State Career Cluster ID, and Federal Career Cluster ID.

NOTE: A service ID can apply to more than one Career Cluster and/or Program of Study.

Go to this link <https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/approved-cte-programs-study> for a complete listing of those Service IDs associated to a Program of Study.

- a. Only CTE Codes 6 and 7 will have a Program of Study Indicator, Statewide or Regional Program of Study Indicator, State Career Cluster ID, and Federal Career Cluster ID. Do not populate any of these fields for CTE Codes 4, 5, or E unless the regional program of study is in an unapproved region.
 - b. One student may have more than one Program of Study in different career clusters with corresponding indicators.
 - c. Assign the corresponding Statewide POS Indicator (S), State Career Cluster ID, and Federal Career Cluster ID for the Program of Study Indicator. If the POS Indicator is S, skip step d and all of its sub-steps.
 - d. If the POS Indicator is R, assign the corresponding Regional POS indicator by looking up the valid Regions for the Regional POS.
 - i. Use the [Regional Programs of Study At a Glance Document](#) to determine if the student's Geographical Region is valid for the POS; if yes, write the Region Indicator (R) and retain the student's previously determined CTE indicator value of 6 or 7.
 - ii. If the student's Geographical Region value is not one of the valid regions for the POS, change the CTE Indicator from a 6 or 7 to E and retain the previously determined Program of Study value and the corresponding Region Indicator (R) from CTE Service ID Lookup table.
2. **Next, populate the school year:**
 - a. For students who are coded as 5, E, 6, or 7, write the same school year to all records in the output file for one student. Write the year of the student's latest CTE course completion record.
 - b. For students who are coded a 4, write the school year for which the PEIMS SUMR data being evaluated was submitted. (EX: Data submitted in June 2022 is for the 2021-2022 school year. Use 2021-2022 as the school year for students who are a 4 in that submission.) See step 3 in the "Determining LEAs/Campuses/Grade Levels per Year" section for criteria for 4's.

Unnecessary CTE Indicators

TEA only records a student’s highest and most recent indicator codes. If a code has been superseded by a later classification, the earlier code is not recorded.

Suppress Low Indicators for Students with 6s or 7s.

If a student has any Service IDs that are rated as a 6 or 7, the table suppresses any rows for 4’s, 5’s, or E’s. (The exception to this is any 6s or 7s that were demoted to E's as part of Step 1.d.ii.)

Example:

School Year	Service ID	POS	Credit	CTE Indicator	Action
2016	11111111	POS A	2	5	suppress
2017	22222222	POS B	2	6	display
2018	44444444	POS C	2	6 demoted to E	display

Note: In the above scenario, 2018 is an example of a regional program of study offered in an unapproved region. The student transfers to an LEA in a region not approved for the regional program of study.

Suppress Non-Latest School Years

Suppress any prior year row where the CTE indicator is NOT the latest year in which the student achieved a CTE rating for a given Program of Study. As noted previously, any school years are updated to match the most recent school year for which the student has completed a CTE course.

EXAMPLES:

Original data:	Service ID	CTE Indicator	Program of Study
2018	78787878	6	POS A
2019	89898989	6	POS B
Output:			
2019	78787878	6	POS A
2019	89898989	6	POS B

In the example above, courses in two different Programs of Study qualify as 6s, and consequently, both need to be calculated and retained in 2019. Because the course in Program of Study B is the most recently completed CTE course (2019), the school year for the earlier course in Program of Study A is updated to 2019.

History	School Year	Service ID	LEA	CTE Indicator	Program of Study
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First reported in 2016	2016	33333333	LEA A	6	POS A
Autocalc performed in 2019	<u>2019</u>	33333333	LEA B	E	[POS A not approved for Dist. B region]
New course taken in 2019	2019	44444444	LEA B	5	POS B

In the example above, the student took course 33333333 in a region that was authorized for Program of Study A. Then the student moved to LEA B in a different region that was NOT authorized for Program of Study A. Consequently, when TEA ran the autocalculation in 2019, the student’s original 6 was demoted to an E and the school year for course 333333333 was updated to match the latest completed CTE course in the student’s record, namely 44444444 in 2019.

Student never completed a CTE	CTE Indicator	Comments
2019	4	(only appears once in R&A output)

In the scenario above, a senior student has never completed a CTE course in their entire career. TEA only needs the latest school year, so a single row is recorded for that student, and is populated with the current year.

Suppress Lower Indicators within a POS

If student is a 7 within a Program of Study, any other Service IDs within that Program of Study (including 6s) are suppressed.

School Year	Service ID	POS	Credit	CTE Indicator	Action
2016	21212121	POS A	2	5	suppress
2017	32323232	POS A	2	6	suppress
2018	43434343	POS A	2	7	display

APPENDIX

See attached:

- CTE Autocalculation – Basic Decision Tree
- CTE Autocalculation – Scenarios Worksheet
- CTE Autocalculation – Scenarios Illustrated

- 2018-2019 2019-2020 CTE Indicator Business Rules Look-up Tables.xlsx
- Business Rules