The attached document, Career/Technical Education — Tool for Evaluating the Quality of a CT Program, can be used to assess the quality of a specific CT program of study at comprehensive high schools, shared-timed CT centers or full-time CT centers, including Technology Centers That Work (TCTW) sites.

This self-assessment tool was designed to bring consistency and objectivity to the evaluation of a CT program. The tool includes descriptions for progressive levels of implementation. CT teachers and school leaders can use the tool to pinpoint strengths and gaps in their CT programs and to conduct a self-assessment prior to a Technical Assistance Visit (TAV). TAV teams can use the tool to focus on strengths and challenges the school faces in creating high-quality programs of study. School improvement consultants can use the tool to improve program quality.

Use the indicator descriptions in the following pages to evaluate the quality of the CT program, based on the four levels of implementation, and record the level below. After recording the levels of implementation, identify the challenges to reaching full implementation and develop actions to overcome those challenges.

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<th>CT PROGRAM LEVEL OF IMPLEMENTATION</th>
<th>CHALLENGES TO IMPLEMENTATION</th>
<th>ACTIONS TO OVERCOME CHALLENGES</th>
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<td>1. Program of Study</td>
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<td>2. CT Syllabus</td>
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<td>6. Embedded Numeracy</td>
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<td>11. Articulation and Dual Enrollment Agreements</td>
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<td>12. Advisory Committee</td>
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<td>17. State Assessment, HSTW Assessment and College Readiness</td>
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<td>18. Industry Credentialing and Technical Assessments</td>
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</table>
### Quality Indicators

**Level 1**
- Little or No Development and Implementation

**Level 2**
- Limited Development or Partial Implementation

**Level 3**
- Operational Level of Development and Implementation

**Level 4**
- Exemplary Level of Development and Implementation

## 1. Program of Study

A career-focused program of study includes a sequence of college-preparatory academic courses and a sequence of at least four career/technical (CT) courses students would take to prepare for both further study and careers in the broad career field. It can be career theme-based or occupational-specific. The sequence of CT courses is aligned with academic standards required for high school graduation, college- and career-readiness standards required for successful transition to postsecondary education, and technical standards essential to the career field.

- The program of study does not include a sequence of at least four courses to meet CT completer requirements.
- The program of study is not aligned with state academic standards required for high school graduation.
- The program of study is not aligned with college- and career-readiness standards.
- The program of study is not aligned with current technical content standards.

- The program of study is aligned to state academic standards for reading required for high school graduation.
- At least 75 percent of the program of study is aligned with college- and career-readiness standards for reading and mathematics.
- At least 75 percent of the program of study is aligned with current technical content standards.
- The program of study includes a sequence of at least four courses.

- The program of study is fully aligned with state academic standards for reading, mathematics and science required for high school graduation.
- The program of study is aligned with college- and career-readiness standards, and students complete the HSTW-recommended academic core for CT students.
- The program of study is aligned with current technical content standards.
- The program of study includes a sequence of at least four courses to meet CT completer requirements.
- The program of study is not aligned to state academic standards required for high school graduation.

### Career/Technical Education — Tool for Evaluating the Quality of a CT Program

This evaluation tool, based on a program audit rubric model from Trumbull Career & Technical Center, Warren, Ohio, was developed with input from the TCTW Advisory Committee and HSTW Board.

1. Some states define a CT completer based on a sequence of three CT courses, completion of a specified number of hours, etc. For this indicator, use the appropriate prescribed state measure for determining a CT completer.
2. CT Syllabus

Each course in the sequence of CT courses has a syllabus that meets guidelines and includes sample exemplary assignments and projects relevant to the career field and formative and summative assessments.

Examples of assessments, projects, and standards:

- Academic standards for high school graduation
- College- and career-readiness standards
- Industry standards

Course syllabi do not exist for all CT courses.

Existing CT course syllabi do not meet course syllabus guidelines or include necessary elements, such as:

- Course description
- Instructional philosophy
- Course goals
- Major course projects
- Project outlines
- Instructional delivery plan
- Assessment plan
- Standards and industry standards
- Assessment plans
- Instructional delivery plans
- Course descriptions
- Course goals
- Project outlines
- Standards and industry standards
- Academic standards for high school graduation
- Industry standards
- College- and career-readiness standards
- CT syllabus includes descriptions of projects used in the career field
- Where course level within the program matches the required level
- CT course descriptions indicate where courses fall within the program of study
- Examples of assignments, projects, and assessments are designed to help students meet the standards for high school graduation and technical standards for the career field.
- All CT courses meet all requirements of Level 3, and each course is aligned to the essential college- and career-readiness standards.
- All CT courses have a course description.
- At least 50 percent of the courses have an example of an authentic project to be assessed by a panel of judges.

2 An anchor assignment is a major activity, problem or project that is authentic, will take several days to complete and engage students as they apply literacy and numeracy skills. The anchor assignment assesses for an understanding of the skills.
### Career/Technical Education — Tool for Evaluating the Quality of a CT Program

**Level 1**

- No work-based learning is established.
- CT leadership takes actions to support establishment of work-based learning.

**Level 2**

- Work-based learning opportunities include field trips, job shadowing, and internships.
- There is a formal training plan for internships.
- The school’s work-based learning coordinator actively solicits local businesses to provide work-based learning opportunities for CT students to gain firsthand experience in the career area.
- There is ongoing formal communication between the school and the business providing work-based learning to ensure the work-based learning and classroom assignments are linked directly.
- The CT program does not allow students to gain firsthand experience in the broad career area.

**Level 3**

- Work-based learning opportunities include field trips, job shadowing, internships, and cooperative work experiences.
- There is a formal training plan for work-based learning.
- There is a formal training plan for cooperative work experiences.
- Students are expected to complete school assignments related to the work-site activities (e.g., maintaining daily logs of work-site activities, preparing weekly summaries, and developing a portfolio and professional resume).
- CT leadership takes actions to resolve issues identified during follow-up.

**Level 4**

- Work-based learning opportunities include field trips, job shadowing, internships, and cooperative work experiences.
- There is a formal training plan for cooperative work experiences.
- Cooperative work experiences include paid and job-shadowing opportunities.
- No formal follow-up on work-site activities is done with employers or students.
- CT leadership takes actions to resolve issues identified during follow-up.
## Career/Technical Education — Tool for Evaluating the Quality of a CT Program

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
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<tbody>
<tr>
<td><strong>CT Student Organizations (CTSOs)</strong></td>
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<tr>
<td>There is no participation in the CTSO and no plan for increasing participation.</td>
<td>The CTSO is an integral part of the instructional program and provides opportunities for service to the CTSO.</td>
<td>All students participate in at least one CTSO or related activity.</td>
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</tr>
<tr>
<td>The CTSO is an integral part of the instructional program and provides opportunities for service to the CTSO.</td>
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<tr>
<td><strong>Embedded Literacy</strong></td>
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<tr>
<td>There is no evidence of literacy strategies being used in the CT classroom.</td>
<td>Technical reading and writing are evident.</td>
<td>Two to three examples of anchor assignments embedded with reading and writing are found in every course syllabus.</td>
<td>A major anchor assignment is found in every course during each grading period.</td>
</tr>
<tr>
<td>The course syllabus has one example of an anchor assignment embedded with reading and writing.</td>
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### Career/Technical Education — Tool for Evaluating the Quality of a CT Program

5. **Embedded Literacy**

Each course in the CT program integrates reading and writing academic standards and strategies into all aspects of learning in the CT classroom. Assignments frequently require students to read, write and make presentations related to the CT field of study.

<table>
<thead>
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<th>Level 1</th>
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<tbody>
<tr>
<td>There is no evidence of literacy strategies being used in the CT classroom.</td>
<td>No evidence exists in course syllabi of anchor assignments that require reading and writing about technical content relevant to the career field.</td>
<td>The course syllabus has one example of an anchor assignment embedded with reading and writing.</td>
<td>Technical reading and writing are evident.</td>
</tr>
<tr>
<td>The course syllabus has one example of an anchor assignment embedded with reading and writing.</td>
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### Classroom Engagement

- Teacher and student engagement in the classroom is high, with active participation of students in classroom discussions and activities.
- Classroom activities are aligned with the program's academic and CTE standards.
- Students are actively involved in classroom discussions and activities.
- Classroom assessments are aligned with program goals and aligned with CTE standards.

### Program Effectiveness

- The program is meeting the needs of students and preparing them for post-secondary education or the workforce.
- Student outcomes are being measured and monitored regularly.
- Program evaluation is ongoing.
## Embedded Numeracy

### Level 4
- Mathematics academic standards and numeracy strategies are incorporated into CT assignments and all aspects of learning in the CT classroom, with frequent assignments that require students to apply mathematics skills to authentic problems found in the CT field of study.

### Level 3
- Teachers are using mathematics vocabulary for mathematics-related to the CT course.

### Level 2
- Two to three examples of anchor assignments embedded with mathematics are found in each course syllabus.

### Level 1
- No evidence exists in course syllabi of anchor assignments that require mathematics to solve problems relevant to the career field.

## Use of Technology

### Level 4
- Information technology and career-related software are high-tech and up to date based on industry standards. All students are required to use technology and career-related software, and are assessed on their ability to use it.

### Level 3
- Information technology and career-related software are adequate, but not up to date based on industry standards. Not all students are required to use technology and career-related software, and are not assessed on their ability to use it.

### Level 2
- Evidence exists of instructors using technology for instruction, but there is little or no evidence of students using technology for instruction. Career-related software and hardware are outdated.

### Level 1
- Information technology and career-related software are not available to students or not used.

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**Career/Technical Education — Tool for Evaluating the Quality of a CT Program**

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**Quality Indicators**

### Level 1
- No evidence exists in course syllabi of anchor assignments that require mathematics to solve problems relevant to the career field.

### Level 2
- Evidence exists of instructors using technology for instruction, but there is little or no evidence of students using technology for instruction. Career-related software and hardware are outdated.

### Level 3
- Information technology and career-related software are used in a limited way. Career-related software and hardware are not up to date based on industry standards.

### Level 4
- Information technology and career-related software are high-tech and up to date based on industry standards. All students are required to use technology and career-related software, and are assessed on their ability to use it.
Professional Development

CT teachers must be prepared to develop and deliver curriculum and instruction reflecting the needs of the modern workplace and leading to academic and CT success for all students.

Professional development helps teachers gain new skills and update old skills in:
- Academic and technical content.
- Classroom management.
- Pedagogy.
- Classroom assessment.
- Project-based learning.
- Embedding academics into CT content.

There is little or no evidence of professional development to strengthen CT teachers’ content knowledge and pedagogical skills.

Professional development provided has no connection to key practices proven to engage students and improve academic achievement.

Professional development provided has no connection to the identified needs of the program.

Professional development is planned with little, if any, input from CT leaders and teachers.

CT teachers in this program have received professional development on key practices to engage students:
- Adapt teaching to different learning styles.
- Teach through cooperative learning strategies.
- Use student-centered instruction to motivate and deepen student learning.
- Help students make connections between the classroom and the real world.

There is no evidence that CT teachers in this program collaborate with academic teachers in the school or district.

There is no evidence that new CT teachers have completed an initial induction program, work with master teachers or a mentor.

CT teachers in this program have had little, if any, opportunity to update their content knowledge and skills.

There is evidence that teachers are using these key practices to engage students.

CT leaders and teachers use data to identify gaps and target professional development to eliminate gaps.

CT teachers have received professional development on key practices listed in Level 2 and on further practices:
- Embed literacy skills into technical content.
- Embed high-level mathematics into technical content.
- Use project-based learning to deepen understanding.
- Align classroom assessment to challenging academic and technical standards.

There is evidence that CT teachers work with academic teachers to embed literacy and numeracy into technical content.

New CT teachers entering program via an alternative route have completed an initial induction program but do not work with a master teacher or mentor.

CT teachers are provided opportunities to update their technical knowledge and skills through workshops, formal classes, externships, etc.

Professional development is focused on both school and CT program needs, and evidence suggests a positive impact on student achievement.

There is evidence that nearly all of the key practices in Levels 2 and 3 are incorporated into unit planning and daily lesson planning.

CT teachers must be prepared to develop and deliver curriculum and instruction reflecting the needs of the modern workplace and leading to academic and CT success for all students.

There is little or no evidence of professional development to strengthen CT teachers’ content knowledge and pedagogical skills.

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- Use student-centered instruction to motivate and deepen student learning.
- Help students make connections between the classroom and the real world.

There is no evidence that CT teachers in this program collaborate with academic teachers in the school or district.

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There is evidence that CT teachers work with academic teachers to embed literacy and numeracy into technical content.

New CT teachers entering program via an alternative route have completed an initial induction program but do not work with a master teacher or mentor.

CT teachers are provided opportunities to update their technical knowledge and skills through workshops, formal classes, externships, etc.

Professional development is focused on both school and CT program needs, and evidence suggests a positive impact on student achievement.

There is evidence that CT teachers participate in a larger professional learning community.

All new CT teachers in the program complete an initial induction program and a formal mentoring program in a support network.

CT teachers participating in a larger professional learning community:
- Are more engaged in professional knowledge building.
- Are more engaged in professional development.
- Are more engaged in professional learning.
- Are more engaged in professional networking.
- Are more engaged in professional self-care.
- Are more engaged in professional accountability.
- Are more engaged in professional leadership.

There is evidence that nearly all of the key practices in Levels 2 and 3 are incorporated into unit planning and daily lessons.
Guidance and Advisement

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<tr>
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<tr>
<td>9. Guidance and Advisement</td>
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<tr>
<td>Guidance and advisement systems provide CT students with opportunities to explore career and educational options, including preparing a plan of study, being connected with a caring adult and attending extra-help sessions. The systems provide opportunities for parental involvement.</td>
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<tr>
<td>There is no evidence of students having opportunities to explore career and educational options. Students do not complete a career-interest inventory. Students do not prepare a plan of study.</td>
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<tr>
<td>Students are made aware of dual credit opportunities by the 11th or 12th grade. Students are encouraged to enroll in dual credit courses relevant to the CT program. At-risk students are identified upon entering grade nine and provided intervention and support to meet grade-level standards. Students are assigned to an adult mentor who works with them throughout all four years of high school to help them stay on track.</td>
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<tr>
<td>Students complete a career-interest inventory no later than grade nine. Students set career goals and prepare a six-year plan of study linked to postsecondary education options to achieve those goals.</td>
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<tr>
<td>Students are aware of the requirements for various career options and the effort needed to meet those requirements. Students and parents meet with their adviser at least annually to review progress made toward completing the plan and, if necessary, adjust the plan to reflect changes in career goals.</td>
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<tr>
<td>Students are encouraged to enroll in dual credit courses relevant to the CT program.</td>
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<tr>
<td>An effective teacher-adviser system is in place, and CT teachers serve as teacher-advisers.</td>
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<tr>
<td>The school provides information and assistance to parents on topics such as college entrance requirements and financial aid. The high school collaborates with feeder middle grades schools to make students and parents aware of career and educational options.</td>
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<tbody>
<tr>
<td>Parents have little or no involvement in the CTE program. They are not aware of the student's program or goals and do not monitor progress towards completion.</td>
<td>Parents are involved in the student's program but not fully aware of all aspects. They may attend some parent-teacher conferences or monthly program updates.</td>
<td>Parents are highly involved in the student's program, actively supporting academic and career goals. They attend regular meetings and actively participate in the planning and evaluation of the student's progress.</td>
<td>Parents are highly involved in the student's program, actively supporting academic and career goals. They attend regular meetings and actively participate in the planning and evaluation of the student's progress.</td>
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</table>
11. Articulation and Dual Enrollment Agreements between Secondary and Postsecondary Institutions

Articulation matches course work between secondary and postsecondary education to reduce redundancy, and dual enrollment adds depth to the CT program.

The agreement creates local, regional or statewide partnerships between the school district/high school and a technical college, two-year college or four-year college.

The agreement establishes policies and procedures for academic and technical content alignment, student eligibility for dual credit courses, criteria for awarding postsecondary credit for dual credit courses, criteria for dual-credit instructors, etc.

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<tbody>
<tr>
<td>No articulation agreement exists for this CT program.</td>
<td>This CT program is supported by an articulation/agency agreement with the nearby technical or two-year college.</td>
<td>This CT program is supported by articulation/agency agreements with postsecondary institutions within the region.</td>
<td>This CT program is supported by articulation/agency agreements with multiple postsecondary institutions statewide. Articulation/dual enrollment agreements are reviewed annually.</td>
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</tr>
<tr>
<td>No dual enrollment policy is in effect for this CT program.</td>
<td>Eligibility criteria for enrollment in dual credit CT courses address the required technical skills but not college placement standards for reading, writing and mathematics. No criteria are established for awarding postsecondary credit.</td>
<td>Eligibility criteria for enrollment in dual credit CT courses address the required technical skills and college placement standards in reading, writing and mathematics required for this CT program, but they may differ from the college-placement standards for academic dual credit courses. Criteria are established for awarding postsecondary credit, but credit earned is placed in escrow, rather than being immediately added to the high school and postsecondary transcripts. Articulation/dual enrollment agreements have established the same requirements for faculty teaching dual credit courses, whether to high school or college students. There is no evidence of common course syllabi and end-of-course exams for dual credit courses, whether taught at the high school or college. Articulation/dual enrollment agreements are reviewed at least every two to three years.</td>
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<tr>
<td>Articulation matches course work between secondary and postsecondary education to reduce redundancy, and dual enrollment adds depth to the CT program.</td>
<td>Articulation/dual enrollment agreements establish the same requirements for faculty, course syllabi and end-of-course exams, whether taught to high school or college students. There is no evidence that articulation/dual enrollment agreements are reviewed at least every three to four years.</td>
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<tr>
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### Level 1

- **Advisory Committee**
  - No advisory committee is established, or the committee exists only on paper.
  - The committee meets at least once a year, but has minimal influence on issues affecting the program of study.
  - The committee hears reports and gives limited input, but does not make recommendations for future actions.

- **Marketing, Public Relations and Community Outreach**
  - There is little evidence of program marketing.
  - The value of the program is reflected in active marketing efforts that reach students, parents and the community.

### Level 2

- **Advisory Committee**
  - The advisory committee — balanced with a variety of stakeholders and persons who can influence policy decisions — meets at least quarterly to consider actions requiring input from stakeholders and employers.
  - The committee hears progress reports, makes recommendations and receives feedback on actions taken.

- **Marketing, Public Relations and Community Outreach**
  - The program is aggressively marketed to all students, parents and community stakeholders.
  - Teachers and counselors are knowledgeable about the program, its course requirements, the level of academic and technical knowledge needed and career options.
  - Teachers encourage participation in the program.
  - Teachers respond to inquiries and provide helpful information.

### Level 3

- **Advisory Committee**
  - The advisory committee meets at least twice a year and represents most stakeholders, including business/industry, secondary and postsecondary leaders, teachers, parents and students.
  - Meetings have an established agenda, attendance is taken and minutes are recorded.
  - The committee hears progress reports and makes recommendations.

- **Marketing, Public Relations and Community Outreach**
  - The program is described in the school’s printed literature and on its Web site.
  - Student and parent engagement and on campus and community participation in the marketing efforts are evident.
  - The value of the program is reflected in active marketing efforts that reach students, parents and the community.

### Level 4

- **Advisory Committee**
  - The program’s advisory committee is balanced with a variety of stakeholders and persons who can influence policy decisions.
  - The committee meets at least quarterly to consider actions requiring input from stakeholders and employers.
  - The committee hears progress reports, makes recommendations and receives feedback on actions taken.

- **Marketing, Public Relations and Community Outreach**
  - The program is aggressively marketed to all students, parents and community stakeholders.
  - Teachers and counselors are knowledgeable about the program, its course requirements, the level of academic and technical knowledge needed and career options.
  - Teachers encourage participation in the program.
  - Teachers respond to inquiries and provide helpful information.

### Quality Indicators

- **Advisory Committee**
  - Level 1: No advisory committee is established, or the committee exists only on paper.
  - Level 2: The advisory committee operates with a balanced representation of stakeholders and persons who can influence policy decisions.
  - Level 3: The advisory committee meets at least quarterly to consider actions requiring input from stakeholders and employers.
  - Level 4: The program’s advisory committee is balanced with a variety of stakeholders and persons who can influence policy decisions.

- **Marketing, Public Relations and Community Outreach**
  - Level 1: There is little evidence of program marketing.
  - Level 2: The program is described in the school’s printed literature and on its Web site.
  - Level 3: The program is described in the school’s printed literature and on its Web site.
  - Level 4: The program is described in the school’s printed literature and on its Web site.
### QUALITY INDICATORS

#### LEVEL 1
- **Enrollment**
  - Enrollment is 95-100% of program capacity as defined by the school for a three-year period.
  - There is a plan for how to reach program capacity, and current enrollment has met or exceeded the plan.
  - At least three-fourths of the students enrolled in the program chose it due to their career interests and planning.

#### LEVEL 2
- **Enrollment**
  - Enrollment is 75-94% of program capacity as defined by the school for a three-year period.
  - There is a plan for growing enrollment to program capacity.
  - More than half of the students enrolled in the program chose it due to their career interests and planning.

#### LEVEL 3
- **Enrollment**
  - Enrollment is 60-74% of program capacity as defined by the school for a three-year period.
  - There is a plan for growing enrollment to program capacity.
  - More than half of the students enrolled in the program were placed in the program rather than choosing it due to their career interests.

#### LEVEL 4
- **Enrollment**
  - Enrollment is less than 60% of program capacity as defined by the school for a three-year period.
  - There is no plan for growing enrollment to program capacity.
  - More than half of the students enrolled in the program were placed in the program rather than choosing it due to their career interests.

### Retention and Completion

#### Retention
- **Year 1**
  - School is 95-100% of students entering this CT program continue past the foundation course for the three-year period.

#### Completion
- **Year 1**
  - The percentage of program completers as defined by the school is 95-100% for a three-year period.

### Post Program Positive Placement

#### Retention
- **Three-year Period**
  - The school is less than 60% of graduates from the program are working in the career field or related field, operating entrepreneurial ventures, enrolled in postsecondary education in the career field, or serving in the military one year after graduation.

#### Completion
- **Three-year Period**
  - The percentage of program completers as defined by the school is 95-100% for a three-year period.
### 17. State Assessment, HSTW, and College-Readiness Assessment

<table>
<thead>
<tr>
<th>Quality Indicators</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Less than 25% of students enrolled in the program meet state standards by the end of the three-year period.</strong></td>
<td>75-100%</td>
<td>50-74%</td>
<td>25-49%</td>
<td>Less than 25%</td>
</tr>
<tr>
<td>Technical assessments exceed 90%.</td>
<td>Pass rates on certification exams exceed 90%.</td>
<td>Pass rates on certification exams are 60-74%.</td>
<td>Pass rates on certification exams are below 60%.</td>
<td>The program does not pursue technical assessments.</td>
</tr>
<tr>
<td><strong>Less than 25% of students enrolled in the program take a certification exam.</strong></td>
<td>Pass rates on certification exams are 75-89%.</td>
<td>Pass rates on certification exams are 25-49%.</td>
<td>Pass rates on certification exams are 50-74%.</td>
<td>The program does not pursue technical assessments.</td>
</tr>
<tr>
<td>Students are required to take an industry certification exam.</td>
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<td>The program does not pursue technical assessments.</td>
</tr>
</tbody>
</table>

### 18. Industry Credentialing and Technical Assessments

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</thead>
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<td><strong>Less than 25% of students in the program take a certification exam.</strong></td>
<td>50-74%</td>
<td>25-49%</td>
<td>75-100%</td>
<td>Less than 25%</td>
</tr>
<tr>
<td>Pass rates on certification exams are 75-89%.</td>
<td>Pass rates on certification exams are 25-49%.</td>
<td>Pass rates on certification exams are 50-74%.</td>
<td>Pass rates on certification exams exceed 90%.</td>
<td>The program does not pursue industry credentialing.</td>
</tr>
<tr>
<td>The program does not pursue available industry credentialing.</td>
<td>The program offers one industry credential and encourages students to take the certification exam.</td>
<td>25% to 49% of students in program take a certification exam.</td>
<td>75-100% of students enrolled in the program take a certification exam.</td>
<td>The program provides funding for certification exam fees, and all students are required to take the exam.</td>
</tr>
<tr>
<td>The program leads to industry certification that has value in the workplace. A certification exam can serve as an end-of-program exam and provide students the opportunity to earn an industry credential in addition to their high school diploma.</td>
<td>Students are required to take an industry certification exam.</td>
<td>Students are required to take an industry certification exam.</td>
<td>Students are required to take an industry certification exam.</td>
<td>The CT program leads to industry certification exams.</td>
</tr>
<tr>
<td>Technical assessments are nationally benchmarked and include a knowledge-based written component.</td>
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<td>Technical assessment is not benchmarked.</td>
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APPENDIX A: Eight-Step Design Template for Authentic Anchor Project Units

The criteria for developing the prototype design template for Authentic Anchor Project Units at a minimum will include the following eight-step process.

1. Identify and describe a major project that is rich with embedded mathematics content that career/technical faculty will have students complete during each 12 weeks of school.

2. Identify the embedded mathematics and technical standard(s) and use of technology tools that can be taught through the authentic integrated project units. This will involve taking the mathematics standards and being deliberate about identifying the specific knowledge and skills students are expected to apply and understand.

3. Identify the literacy study skills and habits of success that students will be expected to apply in advancing their mastery of academic and technical content and skills. This will involve identifying materials to be read, records to be kept, reports to be written, quality of work expected, behavior expectations for individual and teamwork, and specifications of other key habits of success important to the 21st-century workplace.

4. Develop a summative assessment that incorporates mathematics and technical content questions and the use of technology questions at the end of the unit. Describe re-teaching strategies for those students who fail to demonstrate mastery and indicate the benchmark level that would be acceptable for demonstrating mastery at the proficient level.

5. Determine how students will be pre-assessed for current level of knowledge and skills in each of these four domains—mathematics, technical content, the use of technology, and other skills and habits essential to success. Identify the methods and techniques for assessing students' understandings and skills in these areas, including questioning, observations, worksheets, group learning activity, vocabulary, etc.

6. Determine how career/technical faculty will engage students with mathematics and technical content and the use of technology and tools embedded in the authentic anchor project unit. Identify: 1) a series of teacher-directed instructional activities; 2) student assignments aimed at helping students understand the mathematics and technical content; and 3) ways technology will be used to enhance learning. Part of this planning will involve bridging the gap between the language of the workplace and the formal mathematics language used in the curriculum. Help students understand how the language of the workplace and the language of mathematics are connected.

7. Determine how mathematics faculty will engage students with mathematics and technical content and the use of technology and tools embedded in the authentic anchor project unit. Develop related contextual mathematics assignments using the embedded mathematics concept in the unit. This will involve working with career/technical faculty to plan for the use of mathematics in the career/technical setting. Part of this planning will involve bridging the gap between the language of the workplace and the formal mathematics language used in the curriculum. Help students understand how the language of the workplace and the language of mathematics are connected.

8. Describe how students will demonstrate their understanding of mathematics and technical knowledge and skills by completing the project and assignments that provide feedback for understanding and determine which concepts can be team-taught by mathematics and career/technical teachers.

References: