3B
Action

Professional Services Committee

Report to the Legislature and the Governor on Career Technical Education (CTE)

Executive Summary: This report presents the Report to the Legislature and the Governor on Career Technical Education, as required by SB 52 (Chap. 520, Stats. 2007), for Commission approval.

Recommended Action: Staff recommends that the Commission approve the following report on Career Technical Education (CTE) for transmittal to the Legislature and the Governor pursuant to SB 52 (Chap. 520, Stats. 2007).

Presenter: Helen Hawley, Consultant, Professional Services Division

Strategic Plan Goal: 1

Promote educational excellence through the preparation and certification of professional educators.

♦ Sustain high quality standards for the preparation and performance of professional educators and for the accreditation of credential programs.

March 2008
Introduction
This agenda item presents the report to the Legislature and Governor on the Designated Subjects Career Technical Education Certification, as required by the Commission and SB 52 (Chap. 520, Stats. 2007). The report contains ten recommended modifications to the Designated Subjects Career Technical Education Credential. Two additional changes were specifically mandated by SB 52 and this item reports on the implementation of those changes.

Background
In December 2006, the Commission directed staff to begin the review and revision of the structure and requirements for the Designated Subjects Career Technical Education Credential. The Career Technical Education Design Team was formed in February 2007 and began its collaborative work in March 2007. The report contained in this agenda item represents the outcomes of the Career Technical Education Advisory Panel efforts, including its recommendations for modifications to the Career Technical Education Credential.

On October 12, 2007, Governor Schwarzenegger signed SB 52 (Chap. 520, Stats. 2007) into law. Because the bill was an urgency bill, its provisions became effective immediately upon the Governor’s signature. Those provisions:

1. changed the name of the credential to the “Designated Subjects Career Technical Education (CTE) Teaching Credential.”

2. required the Commission to establish a list of authorized subjects for the CTE credential by September 30, 2007, consistent with the 15 industry sectors identified in the California Career Technical Education Model Curriculum Standards adopted by State Board of Education.

3. required that programs of teacher preparation be consistent with full-time and part-time service.

4. required the Commission to convene an advisory committee to review credential requirements and make recommendations for consolidating requirements for full-time and part-time service with a focus on streamlining the credential structure and reducing barriers to individuals becoming CTE teachers.

5. required the Commission to make recommendations to the Legislature on the minimum requirements for the credential by April 1, 2008.
**Recommendation**
Staff recommends that the Commission approve the attached report on Career Technical Education (CTE) for transmittal to the Legislature and the Governor pursuant to SB 52 (Chap. 520, Stats. 2007).
A Report to the Legislature and the Governor on Career Technical Education (CTE) pursuant to SB 52 (Chap. 520, Stats. 2007)

March 2008
Report to the Legislature and the Governor on Career Technical Education (CTE)

Executive Summary

As directed by the Commission and required by SB 52 (Chap. 520, Stats. 2007), an advisory panel of stakeholders was formed to study the structure and requirements for the Career Technical Education credential and make proposed recommendations for consideration by the Commission and the Legislature.

In December 2006, the Commission directed staff to begin the review and revision of the structure and requirements for the Career Technical Education credential. The panel began its study and deliberations in March 2007. In October 2007, as the panel was continuing its work, the Legislature passed SB 52 (Chap. 520, Stats. 2007) as an urgency measure.

SB 52 required two major efforts to be undertaken by the Commission: 1) to immediately implement specified changes to the Career Technical Education credential; and 2) to convene an expert panel to make recommended changes to the Career Technical Education credential requirements and standards.

To respond to the first mandate, immediately upon its passage and pursuant to the provisions of SB 52, the Commission changed the name of the Designated Subjects Vocational Education Credential to the “Designated Subjects Career Technical Education Credential” and aligned the prior 175 vocational credential authorizations to the 15 industry sectors identified in the Career Technical Education Model Curriculum Standards. On October 22, 2007, the Commission notified the field regarding the change in the name of the credential and regarding the restructuring of the vocational credential authorization to the 15 industry sectors, as required by SB 52. The fifteen sectors are:

1. Agriculture and Natural Resources
2. Arts, Media, and Entertainment
3. Building Trades and Construction
4. Education, Child Development, and Family Services
5. Energy and Utilities
6. Engineering and Design
7. Fashion and Interior Design
8. Finance and Business
9. Health Science and Medical Technology
10. Hospitality, Tourism, and Recreation
11. Information Technology
12. Manufacturing and Product Development
13. Marketing, Sales, and Service
On December 14, 2007, the Commission issued Coded Correspondence 07-19 which included the specific details of those changes. This correspondence is available on the Commission’s website at [http://www.ctc.ca.gov/notices/coded/0719/0719.pdf](http://www.ctc.ca.gov/notices/coded/0719/0719.pdf) All new career technical education credentials issued since October 12, 2007 have been issued as a Career Technical Education credential and within one or more of the 15 occupational sectors.

The second major effort required by SB 52 was for the Commission to convene an expert panel to develop recommendations to the Legislature for streamlining the CTE credential structure, focusing on skills identified as essential for providing successful career technical instruction. The bill required the panel to complete its work and report to the Legislature and the Governor by April 1, 2008. Although the work already begun by the Commission’s existing CTE advisory panel earlier in 2007 was well-aligned with these objectives and provisions of SB 52, the legislation provided additional policy direction for the advisory panel’s work concerning making recommendations on the structure and requirements for the Career Technical Education credential. As such, the panel’s charge included the following tasks and objectives:

- Review career technical education credential requirements to determine if they are appropriate to meet the need for teachers in today’s K-12 schools, and recommend new or modified requirements where necessary.
- Review credential types and authorizations for alignment to the adopted California Career and Technical Education Model Curriculum Standards (2005) and the current instructional needs for K-12 career technical education teachers, and recommend changes to the current types and authorizations consistent with these factors.
- Review and update career technical education teacher preparation program standards to be consistent with California statutes and current research-based best practices for teachers, and recommend updated standards and program requirements as needed to the Commission.

To carry out this focused charge, the CTE Advisory panel reviewed current (2007) data on CTE teachers, the latest information about federal requirements, activities in this area being carried out in other states, and extensive current research on career technical education in California and the nation.

Given the broad scope of the work outlined in both the original charge to the panel and the charge added by the provisions of SB 52, the CTE panel decided on an organizing rubric for the recommendations it would make. The recommendations would be presented under one of three major headings: (1) Recommendations addressing issues relating to streamlining credential requirements in order ultimately to increase CTE teacher supply; (2) Recommendations addressing issues relating to credential types and authorizations in order to improve alignment with California student academic content standards and the skills needed by CTE teachers to successfully teach all students; and (3) Recommendations addressing issues relating to CTE teacher preparation program standards in order to update these standards in line with research and best practices in the CTE field. The recommendations of the CTE panel are provided below.
and listed in accordance with the guidelines of the legislation, as reflected in the three broad category headings under which the recommendations are listed. It should be noted that some recommendations may span two or more categories.

(1) Recommendations addressing issues relating to streamlining credential requirements in order ultimately to increase CTE teacher supply

- Reduce the length of the term of the Preliminary CTE credential from 5 years to 3 years
- Reduce the required number of years of work experience from 5 years to 3 years
- Add advanced industry certifications to the list of activities that qualify as work experience
- Expand the requirement for recent work experience to one year in the last three years or two years in the last five years
- Move the U.S. Constitution requirement from a Preliminary to a Clear credential requirement
- Expand the options for completing the advanced CTE preparation (Level II) to include professional development options for CTE teachers that are equal to or greater than the current CTE advanced preparation
- Count teaching experience with a valid multiple or single subject teaching credential for up to one year of work experience even if it is not directly related to the CTE credential area
- Continue to require the credential holder to complete preparation in CTE foundations unless this preparation has been previously met through similar coursework that includes the laws pertaining to career technical education and the development of career technical education
- Establish that the CTE credential should authorize both full- and part-time teaching assignments, with adequate preparation that does not negatively impact teachers.
- Consider a new pathway for industry experts who may want to teach part-time for a brief period.

(2) Recommendations addressing issues relating to credential types and authorizations in order to improve alignment with California student academic content standards and the skills needed by CTE teachers to successfully teach all students

- Add advanced industry certifications to the list of activities that qualify as work experience
- Establish that the CTE credential should authorize both full- and part-time teaching assignments, with adequate preparation that does not negatively impact teachers.
- Consider a new pathway for industry experts who may want to teach part-time for a brief period.
- Require an early teaching orientation for all new CTE teachers
- Require training for all CTE teachers in how to teach English learners
- Require that an approved program sponsor recommend the individual for the credential
- Expand the options for completing the advanced CTE preparation (Level II) expanded to include professional development options for CTE teachers that are equal to or greater than the current CTE advanced preparation
• Count teaching experience with a valid multiple or single subject teaching credential for up to one year of work experience even if it is not directly related to the CTE credential area. Continue to require the credential holder to complete preparation in CTE foundations unless this preparation has been previously met through similar coursework that includes the laws pertaining to career technical education and the background development of career technical education.

(3) Recommendations addressing issues relating to CTE teacher preparation program standards in order to update these standards in line with research and best practices in the CTE field
• Provide in the standards for a streamlined single comprehensive and integrated program of preparation for CTE candidates
• Provide in the standards for an orientation to all CTE candidates that addresses the essential skills and information needed by a beginning CTE teacher
• Require that an approved program sponsor recommend the individual for the credential
• Provide in the standards that programs be required to provide training for all CTE teachers in how to teach English learners and how to address the needs of students with identified special needs
• Provide in the standards for a support model similar to BTSA to provide mentoring and feedback to CTE beginning teachers

As a result of the panel’s recommendations, a proposed set of new credential requirements for both the preliminary and the clear credential would be established. The following table illustrates these proposed new credential requirements (left column) and provides for comparison the current requirements credential requirements (right column).
## Table 1

### Preliminary Credential Requirements

<table>
<thead>
<tr>
<th>Proposed</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preliminary credential valid for 3 years</td>
<td>1. Preliminary credential valid for 5 years</td>
</tr>
<tr>
<td>2. High school diploma/equivalent</td>
<td>2. High school diploma/equivalent</td>
</tr>
<tr>
<td>3. Recommendation from an approved</td>
<td>3. Recommendation from an approved</td>
</tr>
<tr>
<td>program sponsor</td>
<td>program sponsor or the employer</td>
</tr>
<tr>
<td>4. Three years work experience or</td>
<td>4. Five years work experience or equivalent</td>
</tr>
<tr>
<td>equivalent, including certifications or</td>
<td></td>
</tr>
<tr>
<td>licenses</td>
<td></td>
</tr>
<tr>
<td>5. One year recent work experience in the</td>
<td>5. One year recent work experience in the</td>
</tr>
<tr>
<td>last three years or two years work</td>
<td>last three years</td>
</tr>
<tr>
<td>experience in the last five years</td>
<td></td>
</tr>
<tr>
<td>6. Advanced Industry Certification would</td>
<td>6. Advanced industry certification does not</td>
</tr>
<tr>
<td>qualify as work experience, thereby</td>
<td>qualify as work experience</td>
</tr>
<tr>
<td>reducing the number of years required</td>
<td></td>
</tr>
<tr>
<td>7. <em>Moved to a clear credential requirement</em></td>
<td>7. College-level course work or examination</td>
</tr>
<tr>
<td></td>
<td>on U.S. Constitution</td>
</tr>
</tbody>
</table>

### Clear Credential Requirements

<table>
<thead>
<tr>
<th>Proposed</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Possession of a valid preliminary</td>
<td>1. Possession of a valid preliminary</td>
</tr>
<tr>
<td>credential</td>
<td>credential</td>
</tr>
<tr>
<td>2. Completion of the preliminary CTE</td>
<td>2. Completion of Level I and II teacher</td>
</tr>
<tr>
<td>teacher preparation program (9 semester</td>
<td>preparation (a total of 180 hours or 12</td>
</tr>
<tr>
<td>units or 135 hours). Program includes</td>
<td>semester units)</td>
</tr>
<tr>
<td>instruction in SDAIE</td>
<td></td>
</tr>
<tr>
<td>3. Health education would continue to be a</td>
<td>3. One unit of health education</td>
</tr>
<tr>
<td>part of the clear credential program</td>
<td></td>
</tr>
<tr>
<td>4. College-level course work or examination</td>
<td>4. *Formerly a preliminary credential</td>
</tr>
<tr>
<td>on U.S. Constitution</td>
<td>requirement</td>
</tr>
<tr>
<td>5. Level II Preparation: Four successful</td>
<td>5. Four successful teaching terms and a total</td>
</tr>
<tr>
<td>teaching terms or two successful terms of</td>
<td>of 180 hours or 12 semester units (see above)</td>
</tr>
<tr>
<td>teaching and an advanced preparation program</td>
<td>is the only option allowable to earn the</td>
</tr>
<tr>
<td>or the equivalent</td>
<td>clear credential</td>
</tr>
<tr>
<td>6. Expand the options for completing the</td>
<td></td>
</tr>
<tr>
<td>Level II preparation to include National</td>
<td></td>
</tr>
<tr>
<td>Board Certification, district sponsored</td>
<td></td>
</tr>
<tr>
<td>teacher development programs, induction, or</td>
<td></td>
</tr>
<tr>
<td>documentation of successful teaching</td>
<td></td>
</tr>
</tbody>
</table>
Summary of the Impact of the CTE Panel’s Recommendations

1. CTE teacher supply would potentially be increased by reducing the number of years of work experience, expanding the requirement for recent work experience, accepting advanced certifications for work experience, expanding options for completing credential requirements, and moving the U.S. Constitution requirement to the clear credential.

2. CTE credential requirements would be streamlined by consolidating the part-time and full-time credential into one credential that may be used for full- or part-time assignment, consolidating major teacher competencies into a unitary program of preparation, and limiting recommendations for the credential to only the approved teacher preparation program.

3. The quality CTE teacher preparation would be improved by providing an early orientation to new teachers in the first weeks of teaching, increasing preparation to teach English learners and students with disabilities, and providing supervision and support during initial teacher preparation.

Ongoing Activities to Implement the CTE Recommendations

Some of the recommendations of the CTE Advisory Panel would require changes to the CTE credential requirements, others would require changes to the Commission’s CTE standards, and still others would require changes to existing statutes before they could be implemented. Based on its recommendations for changes to the credential, the panel drafted a set of program standards consistent with the recommendations. The draft program standards have been presented to the Commission and the California education community for comment. The responses of stakeholders will be considered and appropriate revisions will be made to the draft standards. The panel plans to bring a final draft of standards and program requirements to the Commission in June 2008 for adoption.

Legislation has recently been introduced that would implement several of the advisory panel’s recommendations. Senate Bill 1104 (Scott), as currently proposed, would do the following:

- Reduce the term of the CTE Preliminary Credential from 5 to 3 years
- Reduce the years of experience required for the CTE Preliminary Credential from 5 to 3 years.
- Allow National Board for Professional Teaching Standards (NBPTS) certification to meet requirements for the clear credential
- Move the U.S. Constitution requirement from the Preliminary Credential to the Clear Credential, thus eliminating a barrier for beginning CTE teachers.
Report to the Governor and the Legislature on the Study of Career Technical Education Certification

Part I. Background
Over the last several years a number of trends and events have affected Career Technical Education (CTE). In 2006 the National Center for Education Statistics (NCES) released its most current data on high school dropouts, which show a strong correlation between poverty and dropout rates. These data suggest that public education should prepare students not only with functional literacy in core academic areas but also in skills and abilities for the workplace if the cycle of poverty is to be interrupted. Also in 2006, Congress and President Bush reauthorized the Carl Perkins Career and Technical Educational Improvement Act, which provides increased focus on the academic achievement of career and technical education students, strengthened connections between secondary and postsecondary education, and improved state and local accountability with nearly $1.3 billion in federal support for career and technical education school programs in all 50 states through 2012 (http://www.ed.gov/about/offices/list/ovae/pi/reauth/perkins.html). In 2007 the National Center on Education and the Economy appointed a new Commission on the Skills of the American Workforce, whose published report, Tough Choices or Tough Times includes a set of recommendations for meeting workforce and related education demands anticipated over the next fifteen years.

Meanwhile, in California the Department of Education (CDE) began drafting the first California CTE academic content standards in 2005 by reviewing the federally-identified industry sectors. Fifteen out of sixteen sectors were deemed applicable to career technical education for public schools. The CTE Model Curriculum Standards are organized by these 15 sectors (http://www.cde.ca.gov/be/st/ss/index.asp). These standards are aligned to appropriate student academic content for these sectors. The CDE officially renamed vocational education “Career and Technical Education” in 2005 when it adopted CTE academic content standards.

Career Technical Education has also remained a concern of California’s Governor and Legislature. In November 2006, California voters passed a bond that provides $500 million in grants for CTE facilities at K-12 schools as part of the Strategic Growth Plan. In 2007, the Governor requested that the Little Hoover Commission study CTE in California. Recently, the Governor, policymakers and educators have begun efforts to refocus the state on workforce preparation needs and career technical education. The Governor and the legislature approved a budget for 2007-2008 that provides $52 million to enhance CTE curriculum, streamline teacher recruitment and training, maximize facilities funds, and integrate academics into CTE courses (http://gov.ca.gov/index.php/?/fact-sheet/5616/). Specifically, part of the increased funding is designated to expand professional development opportunities for educators by giving teachers and counselors more access to CTE instruction and career counseling training.

Part II. Review of the CTE Credential Structure and Requirements
In December 2006, the Commission on Teacher Credentialing (Commission) directed staff to begin reviewing and updating the current credential structure and requirements of the Designated Subjects Career Technical Education Credentials. This review was directed for two key reasons:
1. These credential requirements had not been reviewed since 1993, and it is the Commission’s policy to periodically review and update credential requirements.

2. The first standards for career technical education had been adopted by the State Board of Education in May 2005. The Commission is mandated by SB 2042 to align teacher preparation standards to K-12 content standards.

As is Commission practice, an expert advisory panel was recruited to help conduct this important work. In January 2007 Commission staff recruited panel members by announcing the nomination process on the Commission’s web site and by direct email to all California ROCPs and teacher preparation programs. Professional organizations were invited by formal letter from Executive Director Dale Janssen to appoint representatives to the panel. Both employers of CTE teachers and educators of CTE teachers were selected. The Association of California School Administrators, California School Boards Association, California Teachers Association, and California County Superintendents Educational Services Association nominated representatives to the panel from their organizations. The California Federation of Teachers was invited to nominate a representative but declined. The California Department of Education provided a liaison. Representatives of the California State University and the University of California systems subsequently joined the panel. The panel included representatives from the stakeholder groups identified above and were selected to represent as evenly as possible all regions of California, gender and ethnicity diversity, and both the K-12 and higher education segments. The list of members of the panel is included as Appendix A.

In advance of the meeting the panel was sent a collection of resource materials that represented the most current research and academic analysis of CTE. These included publications and reports from ERIC, professional journals, the National Center of Educational Statistics, the U.S. Department of Education, the U.S. Department of Labor, and research organizations and institutions. Panel members were instructed to review the current materials prior to meeting to establish a common information base for their discussions. The panel considered the state and national picture in its deliberations. The data presented in the sections below also formed a basis for the panel’s foundational knowledge of CTE current policy and practice.

**CTE Courses in the Public Schools**

Over the last five years the number of CTE courses offered in California’s public schools has decreased from 32,456 to 24,580, a reduction of over 24%. Predictably, the number of CTE teachers employed has also dropped from 5,865 to 4,883, a decrease of almost 18%. However, the average CTE class size has increased slightly from 22 to 25 students, suggesting a continuing demand for these courses. The data in Table 2 below show the reduction in CTE courses and teachers over the last five years across all CTE areas. Appendix C provides CTE course data organized by type of course. Only in the Health Careers area was there a notable increase in the numbers of classes, total enrollment and teachers, with some of these more than doubling. It appears that given limited funds, schools are focusing their resources on the needs of the highest demand career fields.
Table 2
Statewide CTE Students, Classes and Teacher Totals
2001-2007

<table>
<thead>
<tr>
<th>School Year</th>
<th>Course Enrollment</th>
<th># of Classes</th>
<th># of Teachers</th>
<th>Avg. Class Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2007</td>
<td>610,856</td>
<td>24,580</td>
<td>4,883</td>
<td>25</td>
</tr>
<tr>
<td>2005-2006</td>
<td>633,972</td>
<td>24,370</td>
<td>5,046</td>
<td>25</td>
</tr>
<tr>
<td>2004-2005</td>
<td>674,568</td>
<td>25,410</td>
<td>5,207</td>
<td>26</td>
</tr>
<tr>
<td>2003-2004</td>
<td>690,979</td>
<td>26,291</td>
<td>5,419</td>
<td>25</td>
</tr>
<tr>
<td>2002-2003</td>
<td>742,103</td>
<td>32,456</td>
<td>5,865</td>
<td>22</td>
</tr>
<tr>
<td>2001-2002</td>
<td>743,268</td>
<td>29,768</td>
<td>5,837</td>
<td>24</td>
</tr>
</tbody>
</table>

The number of new CTE credentials issued over the last five years has dropped even more dramatically, which suggests a hypothesis that schools may be rehiring experienced CTE teachers rather than recruiting new CTE teachers. Renewal of Clear CTE Credentials has increased (as shown in Table 3), which supports this assumption. First time CTE credentials issued annually have dropped the most, with the overall reduction of over 60% fewer first-time CTE credentials issued in 2006 than in 2001. With the increased funding resources provided in the 2007-08 state budget, California can anticipate a higher demand for teachers to staff the expected increased numbers of CTE classes.

Table 3
Vocational Education Credentials Recommended
2000-01 through 2005-06*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td></td>
<td>1135</td>
<td>1080</td>
<td>854</td>
<td>806</td>
<td>538</td>
<td>352</td>
</tr>
<tr>
<td>Renewal</td>
<td></td>
<td>159</td>
<td>226</td>
<td>225</td>
<td>265</td>
<td>296</td>
<td>292</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1294</td>
<td>1306</td>
<td>1079</td>
<td>1071</td>
<td>834</td>
<td>644</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td></td>
<td>2624</td>
<td>2799</td>
<td>2511</td>
<td>2131</td>
<td>1772</td>
<td>1051</td>
</tr>
<tr>
<td>Renewal</td>
<td></td>
<td>1204</td>
<td>1502</td>
<td>1573</td>
<td>1582</td>
<td>1574</td>
<td>1408</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3828</td>
<td>4301</td>
<td>4084</td>
<td>3713</td>
<td>3346</td>
<td>2459</td>
</tr>
</tbody>
</table>

* Source: Commission on Teacher Credentialing

CTE Credential Requirements Prior to the Implementation of SB 52
Currently, the Designated Subjects Career Technical Education Teaching Credential authorizes the holder to teach the “designated” career technical subjects named on the credential in grades 12 and below and in courses organized primarily for adults which are part of a program of technical, trade or vocational education. The subject that the individual is authorized to teach is determined by the candidate’s five years of work experience in an occupation, such as computer programming, welding or landscaping, rather than based on an academic program of study. Work experience meets one requirement for the preliminary credential. The preliminary full-time credential is valid for a five-year period, during which the holder is required to complete an approved two-level professional preparation program. The first level of preparation introduces the topics of lesson planning, assessment and classroom safety, and must be completed within the first two years of teaching. The second level of the two-level preparation program involves
advanced coursework on teaching methodology, including topics such as lesson planning, assessment, and classroom safety. This coursework completes the preparation for a full-time clear credential over the next three years.

Teachers who hold single subject credentials in agriculture, business, health, home economics and industrial and technology education are authorized to teach vocational classes in and related to these subject matter areas, without any additional authorization, in both regular education classes and career technical education classes. For all other single and multiple subject teaching credentials, teachers must meet the related work experience requirement to teach CTE courses and apply for that credential. However, no additional teacher education preparation is required for these teachers.

In addition to the requirements listed above, the current credential structure differentiates between individuals who teach career technical courses on a part-time and those who teach on a full-time basis. SB 52 required the Commission to “convene an advisory committee to review credential requirements for designated subjects career technical education teaching credentials and make recommendations for consolidating the requirements for full-time and part-time service. It is the intent of the Legislature that the Commission focus on streamlining the credential structure by identifying the essential skills needed for successful career technical instruction in order to increase as quickly as possible the number of persons who possess a career technical education teaching credential.” The part-time credential requires half as much teacher preparation as the full-time credential. Over the last five years the number of part-time credentials issued annually has dropped by half while full-time credentials have dropped by one-third (see Table 3).

The Work of the CTE Advisory Panel
The CTE advisory panel began to meet in March 2007 and met seven times for two days each, approximately monthly through September 2007. The task kept in mind by the panel was to focus on needed changes to the CTE credential structure itself as well as to preparation for the credential that would potentially increase CTE teacher supply, streamline CTE credential requirements, and improve the quality of preparation to teach California students. With these goals in mind, the panel began by reviewing the data presented above concerning CTE courses, teachers and enrollments, the findings of the 2001 Vocational Education Credential Task Force, relevant legislation and a current field survey of ROCPs. This field survey showed that new CTE teachers needed additional support. The employers responding to the survey also predominantly agreed that three years of work experience was sufficient for CTE teachers and that recent work experience was important. Classroom management strategies, English learners methods, and mentoring were identified as the most critical improvements needed in teacher preparation.

The discussions of the panel were framed by several areas of concern regarding the CTE credential structure that have arisen over the past decade. These areas of concern are:

1. Early teacher orientation for CTE teachers. Currently, CTE teachers enter the classroom and work with students prior to participating in any teacher preparation. For all other credential areas, an individual who holds a preliminary credential from the Commission has already completed a specified amount of teacher preparation, including supervised student teaching, before receiving the credential and beginning a first teaching
job. An individual is awarded a preliminary CTE credential, however, based on work experience prior to participating in teacher preparation. CTE teachers are required to participate in teacher preparation after receiving the preliminary credential and during their first two years of teaching. Should an individual be required to complete an early teacher orientation when awarded a preliminary CTE credential?

2. **Period of validity of the preliminary CTE credential.** The preliminary CTE credential is valid for five years. The employer is responsible for ensuring that the preliminary CTE credential holder completes at least the first level of preparation by the end of the second year of teaching. There are instances in which the teacher is allowed to continue teaching past the second year without completing the required initial teacher preparation. According to Regional and Occupational Centers and Programs (ROCP) and credential programs, some candidates do not complete their credential preparation requirements until their fifth year of teaching on the preliminary credential. Should the first CTE credential be valid for a shorter period to ensure that individuals complete the teacher preparation sooner?

3. **Number of years of work experience required for the CTE credential.** Workplace data show that the average number of years that an individual holds a particular job has gradually been reduced due to faster growth and decline cycles in the workplace. Several decades ago, the average length of time an American held a specific job for was seven years. In the 1980’s this length of tenure in a position was reduced to five years. Today, the average length of tenure in a specific job is three years. Workers must develop job skills much more quickly in the current highly competitive job market. Should the years of work experience required to obtain a CTE credential be reduced in a corresponding manner?

4. **Allowable work experience for a CTE credential candidate.** The Commission is authorized by the Education Code to define “work experience” and has identified numerous options for an individual to use. Such options include full- or part-time, paid or unpaid occupational experience. Occupational education and teaching may count for up to one year of work experience. Industry certifications are not among the present options allowed as work experience. If an individual holds advanced level industry certification of skills, should that count toward the experience requirement? Should occupational education and teaching be allowed to count for more of the experience?

Based on all of the information provided to panel members in advance of the meeting, and based on the fundamental issues listed above that were raised with the panel as a discussion framework, the panel at its first meeting raised a number of its own questions regarding possible changes to the credential. These questions were:

- What should be the length of the preliminary credential?
- What should be the number of years of required work experience?
- How recent should that work experience be?
- How should work experience be defined? Should it include education, teaching, volunteerism, licensure and certifications?
- What certifications should be recognized, and how much credit toward work experience should be credited?
The panel members discussed each of these questions as a means of defining the components of their work. Though they had initial responses on which they generally agreed, those responses continued to evolve as additional information and interaction developed at subsequent meetings. The first meeting concluded with a brief discussion of additional information needed by the panel, such as how other states qualify CTE teachers, how education administration programs address CTE, guest speakers who could inform the panel, and liaisons with the Special Education Panel reviewing requirements for Special Education certification and the Staff Development Panel (SB 1292 Guidelines for Staff Development for Teaching English Learners for CTE teachers). Several panel members agreed to review the current Education Code and Title 5 Regulations related to CTE to identify which (if any) might need to be changed. The panel was visited by a CTC legislative consultant to help them see the relationships between the present laws and their charge. One panel member agreed to find information about other states’ requirements for CTE teachers.

One panel member and a member of the Commission staff conducted a study of other states’ requirements for CTE teachers and found wide differences among states. At the extreme end some states require advanced degrees and up to five years of induction. The following table summarizes the requirements of seven states studied. Their requirements ranged from no education to bachelor’s degrees, from two to six years of work experience, and from twelve semester hours to nine semester units of teacher preparation.

<table>
<thead>
<tr>
<th>State</th>
<th>Education</th>
<th>Work Experience</th>
<th>Teacher Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>High school diploma</td>
<td>8 years related work experience</td>
<td>6 units in professional education</td>
</tr>
<tr>
<td>Florida</td>
<td>Bachelor’s degree with certification</td>
<td>6 years work experience and assessment of competencies</td>
<td>9 semester units of professional vocational education</td>
</tr>
<tr>
<td>Illinois</td>
<td>No stated minimum</td>
<td>2000 hours of related work</td>
<td>60 semester hours of professional education</td>
</tr>
</tbody>
</table>

Table 4
Agriculture, marketing, health occupations and cooperative work education also require a bachelor’s degree.

2Other vocational areas require a bachelor’s degree but do not require work experience; however, health requires both a degree and work experience.

Subsequent to this study, a national study of CTE requirements among the various states was conducted. The report is available from the National Research Center for Career and Technical Education (www.ncccte.org.)

As the panel’s deliberations advanced over the following months, they began to agree that however broadly “work experience” might be defined, a minimum of one year of on-the-job experience was necessary due to the nature of CTE, which includes more than specific job skills. Other responsibilities of CTE teachers include interpersonal skills such as working with others, career advancement, common expectations for conduct, attitudes, modes of communication, and appearance, many of which can only be learned at the work site. Panel members also came to agree that while some occupational skills change little over time, others typically change dramatically, rapidly, and constantly. The more technical the occupation is the more the latter is true. This factor makes it necessary for teachers to have some experience actually working at their chosen field with CTE.
**Challenges Identified by the Panel Regarding its Work**

**A. Challenges relating to streamlining CTE teacher preparation**

The panel dealt with the tension between making recommendations that would increase teacher supply and those that would improve the quality of CTE teachers by requiring more experience and/or training. Teacher supply is complicated by several factors, the most important of which is that when occupational skills are in high demand in the workplace, workers can demand higher salaries for their skills. This makes it difficult for schools to entice skilled workers into teaching where salaries may not be competitive with their occupational field. A further burden is placed on potential CTE teachers to pay for teacher education and spend valuable time away from their industry jobs while completing teacher preparation. However, research has repeatedly indicated that students’ learning is strongly related to the quality of their teachers; teacher quality is in turn strongly related to teacher preparation and experience. In addition, teacher retention and success have been proven to increase with providing sustained teacher support. The panel’s challenge was to design a new model for CTE teachers that would reduce barriers to recruitment while at the same time increasing the potential for teacher and student success.

**B. Challenges relating to student diversity**

A further challenge identified by the panel was the increased responsibilities placed on CTE teachers as a result of the Williams Case and the reauthorization of the federal Individuals with Disabilities Education Act (IDEA). The reality of CTE classrooms is that a higher percentage of CTE students are English learners and student with disabilities than are found in regular classrooms. More than any other type of teacher, CTE teachers need to be equipped with the special methods required to educate these students. The panel sought innovative ways of increasing these specialized areas of teacher preparation without negatively impacting teacher recruitment. The panel agreed that contextualizing English learner and Special Education teaching methods with other preparation components, such as curriculum planning and classroom management, would not only extend preparation but also reduce its demands on the teacher. Representatives from Public Advocates, a group which was party to the Williams lawsuit, attended most of the panel meetings and concurred that such a model was well-supported by research.

**C. Challenges relating to providing early preparation to CTE teachers**

One final issue was paramount to the panel: providing early preparation to CTE teachers. Many new CTE teachers are lost to the teaching profession because they enter the classroom unprepared to teach. In addition, students struggle to learn with teachers who are ill-equipped to help them. However, requiring pre-service preparation of all CTE teachers would be likely to discourage many from entering teaching. Presently, most, but not all employers provide some type of orientation for new teachers but this training is not consistent nor comprehensive across employers. After much discussion about what is needed most immediately by teachers and how that might be provided, the panel agreed that an early orientation during the first weeks of teaching could be sufficient if it was supplemented by supervision and peer teacher support at the school site. Such a model could reduce barriers to teaching and increase the quality of teaching.

Several guests contributed to the panel deliberations on these challenges. Jason Spencer, a representative from Senator Torlakson’s office, elicited the panel’s input about the issues of CTE teacher supply and quality and resources. Panel members identified critical concerns as program
resources at the teacher preparation and school level, partnership incentives, CAP restrictions, and alignment of high school graduation requirements with workforce needs. The panel was interested in additional pathways to increase articulation between school and work by providing opportunities for industry trainers to teach students directly. Models of distance learning and team teaching partnerships were two of the avenues discussed that are presently open. However, the panel felt that more opportunities should be explored with incentives for businesses to participate provided.

Another guest interacting with the panel was Dr. Beverly Young, representing the CSU Chancellor’s Office. Dr. Young expressed the CSU’s commitment to prepare CTE teachers, the panel members shared their views about how administrator preparation programs at the CSU could also help to increase local school CTE programs by addressing the financial and legal aspects of CTE for K-12 education. The panel also worked with the SB 1292 task force on developing English learner guidelines for CTE teachers and with those working on Special Education to draft a program standard for students with disabilities who are preparing for the work world.

The panel discussions on how multiple and single subject teachers might be recruited more expediently for CTE classes focused primarily on three concerns about how these teachers are certified to teach CTE: (1) the teachers’ undeniable value as fully prepared teachers should not negate the need for them to have some occupational experience, (2) these teachers should have some formal orientation such as a CTE foundations course, and (3) these teachers should have documented successful teaching experiences in regular education classes. However, reducing barriers for these teachers could potentially provide a valuable source of experienced teachers for CTE classes.

The panel studied the results of intern and induction programs as models for increasing teacher recruitment, retention, and success. These programs have proven track records, but they also have categorical funding which CTE teachers traditionally have not had available. A few programs have linked their CTE teacher candidates with BTSA programs with great success. Though the panel supports a CTE model with increased supervision and support, the members are concerned about the abilities of programs to provide these services in addition to the preparation components of teacher education. Some panel members felt that employers would be willing to provide assistance with early orientation and supervision as part of their ongoing administrative activities, but support from fellow teachers would be difficult to maintain without the ability to offer stipends to those teachers for their time. Funding for preparation programs could become a pivotal issue.
Part III. The CTE Advisory Panel’s Final Recommendations
Following is a list of the recommendations that resulted from the panel’s deliberations. Each recommendation is accompanied by a brief rationale.

1. **Reduce the length of the term of the Preliminary CTE credential from five years to three years.**  
   **Rationale:** Individuals teaching vocational education courses would be required to complete teacher preparation earlier in their teaching career, thus reducing the length of time a CTE teacher is in the classroom without completing teacher preparation.

2. **Reduce the required number of years of work experience from five years to three years.**  
   **Rationale:** To align with the trend toward shorter tenure per job in the workplace, reducing the number of years of work experience required to qualify for a CTE credential would enable more individuals to meet the work experience requirement, thereby potentially facilitating teacher recruitment.

3. **Add advanced industry certifications to the list of activities that qualify as work experience.**  
   **Rationale:** By adding advanced industry certifications to the work experience options, additional individuals with expertise would be able to meet the work experience requirement, thereby increasing the pool of qualified candidates. For example, an automobile mechanic with two years of experience and an industry certification would meet the experience requirement. It would be necessary to compile a list of certifications that could count towards the experience requirement.

4. **Require an early teaching orientation for all new CTE teachers.**  
   **Rationale:** Requiring an early teaching orientation as part of enrollment in a CTE program would increase teacher effectiveness by providing new CTE teachers with basic training in classroom management, lesson planning and grading, safety procedures, and special needs of students. This early orientation would be an introduction to teacher preparation and would give CTE teachers basic “just-in-time” information that would support them in the first months of teaching. The remainder of the preparation program should still be completed over the three years of the credential.

5. **Require training for all CTE teachers in how to teach English learners.**  
   **Rationale:** All teachers of English learner students must have appropriate English learner training (EC 44001, 44253.1, 448300(a)). Teaching English learners was addressed minimally in the current Career Technical Education program standards under the topic of “special populations.” However, this type of teacher preparation should be increased and improved by updating the manner in which it is defined in the program and requiring programs to integrate it throughout the CTE teacher preparation program. The revised program standards address the knowledge and skills a teacher must have to work with English learners through Specially Designed Academic Instruction in English (SDAIE).
6. **An approved program sponsor should recommend the individual for the credential.**
   
   **Rationale:** Under the present requirements an individual may be recommended by the employer or the approved program sponsor. If an employer recommends an individual for a CTE credential, it is possible that the preparation program may not be notified and the individual may not begin the preparation program when he or she begins teaching. In a case such as this, teacher preparation does not begin at the optimum time. If the prospective CTE teacher must apply for the credential through the approved CTE program, enrollment and participation in preparation activities could be ensured.

7. **The requirement for recency of work experience should be expanded to one year in the last three years or two years in the last five years.**
   
   **Rationale:** The present requirement for recent work experience is one year in the last three years. The advisory panel believes this requirement to be too restrictive and may, in fact, eliminate some highly qualified people from teaching CTE courses if they haven’t worked in their occupation in the last three years. Even though some technical aspects of work may change over a few years, the basic principles and applications generally remain the same in many occupations. Teacher recruitment could be increased by widening the recency requirement to include a greater number of years.

8. **The U.S. Constitution requirement should be moved to a Clear credential requirement.**
   
   **Rationale:** Presently, taking a college-level course or passing an examination about the U.S. Constitution is a prerequisite for the preliminary credential. This may be an obstacle for CTE teachers, many of whom have not attended college. Recruitment could be increased by delaying the U.S. Constitution requirement until the individual is in process of clearing the credential.

9. **The options for completing the advanced CTE preparation should be expanded to include professional development options that are equal to or greater than the current CTE advanced preparation.**
   
   **Rationale:** Full-time CTE teachers currently must complete a two-level program of preparation which totals 12 semester units or 180 hours. However, more new CTE teachers are now eligible or required to participate in district-sponsored teacher development programs, induction or mentoring programs which may go beyond the current Level II preparation. The panel has recommended to the Commission that a candidate should be able to clear the credential through employer documented successful teaching or by earning National Board Certification or other advanced professional development. Allowing for additional options for teacher development could encourage new CTE teachers to participate more in the teacher development community and advance their teaching skills in a variety of practical and professionally recognized ways.
10. Teaching experience with a valid multiple or single subject teaching credential should count for up to one year of work experience even if it is not directly related to the CTE credential area. The individual should still be required to complete preparation in CTE foundations.

**Rationale:** Presently multiple and single subject teachers may teach related CTE courses only if they hold a credential in agriculture, business, health, home economics, or industrial and technology education. Other single subject credentialed teachers may teach CTE courses only if they have five years of work experience in the CTE subject, but they do not have to complete a CTE teacher preparation program. The CTE advisory panel suggests that teaching experience, even if it is not related to the CTE subject, is invaluable to the success of CTE teachers. If holding any multiple or single subject credential counted for one year of work experience, more multiple and single subject teachers might be recruited for CTE courses. Under the above recommendation the individual would then only need two years of work experience in the CTE subject and one course in CTE foundations to be eligible for the preliminary CTE credential.

11. Consider a new pathway for industry experts who may want to teach part-time for a brief period only since their skills are in high demand in the workplace.

**Rationale:** The panel discussed considering a new pathway for industry experts who may want to teach part-time for a brief period only since their skills are in high demand in the workplace. These individuals often participate in education through partnerships with ROCP. Many of these partnership opportunities are offered to ROCPs, including ones built around online and distance learning models for students. The panel believes that there is a need for a business/industry partnership certificate (BIPC), limited to one issuance of short duration and one minimal preparation requirement: early orientation.

This would encourage partnership projects with businesses which usually provide the materials and equipment for such projects. Businesses would gain the benefit of being directly involved with training young workers to their precise needs. Such teacher/partners should be currently certified in their field and have recent experience. They should be closely supervised and mentored by the employing school district or county office of education, who would also have the responsibility to insure that instruction in the partnership project meets the standards. Teaching service and preparation under such an authorization should count toward the regular CTE credential if the teacher/partner wants to continue in teaching as a career. Additional discussion needs to take place to implement this recommendation.

**Part IV. CTE Teacher Preparation Program Standards**

**Overview of the Current CTE Teacher Preparation Program Standards**

The current standards for Career Technical Education teacher preparation programs were adopted by the Commission in 1993. Nineteen education agencies operate approved CTE programs across California, including the California State University, the University of California, private and independent institutions of higher education, county offices of education, and school districts. As part of the Commission’s mandate under SB 52, the CTE advisory panel has updated and proposed revisions to the current standards with the goal of improving the quality of CTE teacher preparation and increasing CTE teacher supply. The panel designed the
new draft standards to be aligned with the CTE K-12 standards adopted by the State Board of Education in 2005.

The Draft CTE Preparation Program Standards
The draft CTE preparation program standards are organized in a manner consistent with other California educator preparation standards for ease of implementation since many sponsors of CTE programs also sponsor other types of educator preparation programs. The draft CTE standards are comprised of the Common Standards and the Program Standards, including statements of required candidate competencies. Each of the standards includes elements that help to define the standard and guide programs in both organizing the program and preparing a response to the standards. Some major changes to the CTE program framework as prescribed within the standards are being proposed in terms of structure and substance. These major changes and the supporting rationales are described below.

A. Comprehensive and integrated CTE program design
Current CTE preparation programs consist of two levels which can be thought of as introductory and advanced. Each level requires candidates to complete 6 semester units or 90 hours of professional preparation. For streamlining, the new standards are designed for a single comprehensive and integrated program of preparation of 9 semester units or 135 hours of professional preparation for a single credential that authorizes both part-time and full-time service. The program would have to be completed in three years or less, after which time candidates would be eligible for a clear credential by having completed four documented successful teaching terms, the advanced level of preparation offered by the program, or a variety of other professionally recognized activities.

B. Early orientation for program candidates
Since CTE teachers may enter the classroom prior to completing a teacher preparation program, the panel believes that it is not only reasonable but necessary to provide every new CTE teacher with an orientation within the first few months of teaching. Though many districts provide an orientation for new teachers, there is inconsistency in the content of such orientations, and the orientations are designed for teachers who have completed preparation programs. The CTE advisory panel believes that, by requiring approved preparation programs to provide an orientation that addresses the essential skills and information needed by a beginning teacher, more consistency and comprehensiveness could be realized across all CTE programs. In addition, the CTE advisory panel believes that if approved programs were responsible for orienting CTE teachers and providing basic skills and knowledge as these individuals begin teaching, the programs would be working with candidates from the point of hire, ensuring early advising, support, and supervision. This would likely improve teacher quality and retention.

C. Professional program responsible for candidate recommendation for a credential
In the past, approved CTE preparation programs were not necessarily responsible for recommending candidates for the initial CTE credential. Employers could recommend candidates for the initial credential without the candidate enrolling in a teacher preparation program. A significant shift in the draft standards is to move the responsibility to the approved preparation program to recommend candidates for the initial credential. This
responsibility ensures that all candidates will be enrolled in preparation before they begin to teach and receive early orientation, support and supervision from the program that has recommended for the preliminary credential.

**D. Teaching English Learners (EL)**

Before the passage of SB 1292, CTE teachers were prevented from obtaining preparation to teach English learners if they did not hold a bachelor’s degree. Now CTE teachers can participate in staff development programs for teaching EL students. The draft standards include a separate and explicit standard aligned to the SB 1292 guidelines for teacher competencies in teaching EL students. One critical component of this standard is that these competencies, including SDAIE strategies, must be integrated throughout the preparation program so that they are contextualized for application by the candidates. Therefore, all newly prepared CTE teachers will have the knowledge and skills to work with English learners. The CTE teacher would earn the EL authorization after completion of the initial preparation program.

**E. Teaching students with special needs**

The current CTE program standards address “special populations” in a general manner. A large number of CTE students have special needs. Some CTE courses are designed as opportunities for special needs students to learn practical life and job skills. These courses are known as “transition” and “workability” courses. The responsibility that CTE teachers have for special education students suggests the need for ensuring knowledge about best practices for teaching students with special needs. Therefore, the panel felt that it was essential that the proposed standards include a standard designed to the address the knowledge and skills needed for working with students with special needs.

**F. Beginning teacher support and advisement**

Historically, no formal supervision or support has been required for new CTE teachers. The draft standards define and require a support model consistent with both student teaching supervision and new teacher support to ensure that candidates have multiple opportunities for critical feedback on their practice and mentoring from a skilled colleague. Formally instituting support and supervision during the preparation program will enable candidates to increase the quality of their teaching knowledge within the work context. This approach should help with retention of these teachers and improve the quality of their teaching. This support model has proven effective for other new teachers, and it is imperative that CTE teachers receive similar support and supervision. Additional discussion needs to take place to implement this recommendation.
Appendix A

Career Technical Education Advisory Panel Members

Kit Alvarez  Colton-Redlands-Yucaipa Regional Occupational Program
Paul Bott    CSU Long Beach (retired)
George Brunelle Sacramento City Unified School District
Marianne Cartan Association of California School Administrators
Dale Countryman West Side Regional Occupational Program
Priscilla Cox California School Boards Association
Irene Fuji    Eden Area Regional Occupational Program
Rick Graham  California Teachers Association
Dennis Guido  California Department of Education
Dennis Ivey  California County Superintendents Educational Services Association
Darlene Le Fort Coastline Regional Occupational Program
Knute Momberg Stockton Unified School District
Nona Olsen   Mendocino County Office of Education
Matthew Saldana Long Beach Unified School District
Joseph Scarcella CSU San Bernardino
Diana Schneider Orange County Office of Education/Central County Regional Occupational Program
Valerie Vuichich Fresno County Office of Education
Paul Watters  Butte County Office of Education Regional Occupational Center and Program
Glenn Casey  California Polytechnic University, San Luis Obispo
Lynn Martindale University of California, Davis
Susan Yamate  San Diego County Office of Education
Appendix B
Career Technical Education Credential
Industry Sectors Guide

Agriculture and Natural Resources
- Agriculture business management and marketing
- Agriculture mechanics
- Animal care
- Animal control
- Animal production
- Crop Production
- Floriculture and Floristry
- Forestry, natural resources and rural recreation
- Landscaping
- Ornamental nursery operation

Arts, Media, and Entertainment
- Commercial Art
- Commercial Photography
- Journalism occupations
- Multimedia production
- Performing arts occupations
- Stage technology
- Theatrical occupations

Building Trades and Construction
- Airframe and powerplant mechanics
- Boat building
- Carpentry
- Concrete placing and finishing
- Construction equipment operation
- Construction inspection
- Drafting occupations
- Drywall installation
- Floor covering installation
- Foundry work
- Furniture making, finishing and refinishing
- General contracting
- Glazing
- Heating, air conditioning, and ventilation installation
- and service
- Lathing
- Masonry
- Millwork and cabinet making
- Painting-construction
- Pipefitting and steamfitting
- Plastering
- Plumbing
- Refrigeration installation and maintenance
- Residential and commercial repair and remodeling
- Roofing
- Sheet metal fabrication
- Structural and reinforcement ironwork
- Structural pest control
- Tile setting
- Tool and die making
- Upholstering
- Welding

Education, Child Development, and Family Services
- Child care
- Elderly care services (non-medical)
- Family and human service occupations
- Interpreter for the deaf
- Teaching/teacher aide

Energy and Utilities
- Control system maintenance and repair
- Electrical power distribution
- Electrician
- Electronics assembly
• Electronic consumer products service
• Energy, environment and resource management
• Hybrid microelectronics
• Hydroelectric plant operations

Engineering and Design
• Engineering occupations
• Surveying

Fashion and Interior Design
• Clothing, alteration and repair
• Fabric maintenance services
• Fashion design
• Fashion manufacturing (factory and custom)
• Fashion merchandising
• Interior design

Finance and Business
• Accounting occupations
• Banking
• Business Management
• Financial management and services
• Income tax preparation
• Insurance occupations
• Legal office occupations

Health Science and Medical Technology
• Athletic Trainer
• Biomedical equipment technology
• Dental services
• Health care biotechnology services
• Health care diagnostic services
• Health care information services

Hospitality, Tourism, and Recreation
• Commercial diving
• Custodial Services
• Event and conference planning
• Food and beverage production and preparation
• Food and beverage services
• Hotel and lodging occupations
• Customer Service Representative
• Dietetics and Nutrition Service

• Industrial electronics
• Marine power plant maintenance and repair
• Robotics
• Water treatment

• Hazardous materials occupations

• Jewelry design, fabrication, and repair
• Textile design
• Textile production and fabrication

• Office occupations
• Personnel administration occupations
• Secretarial/stenography occupations
• Small business ownership and/or management

• Health care preventive services
• Health care supportive services
• Medical office services
• Nursing services
• Optical goods work
• Therapeutic services

• Interior Maintenance (residential and commercial)
• Pool and spa service
• Recreation
• Amusement and Theme Park Occupations
Information Technology
- Communications Electronics
- Computer Applications
- Computer Electronics
- Computer Maintenance and Repair
- Computer Programming
- Computer Software Operation
- Computer systems operation
- Information processing
- Information systems management
- Telecommunications

Manufacturing and Product Development
- Computer-assisted manufacturing
- Electronic publishing
- Industrial ceramics manufacturing
- Instrument repair
- Machine tool operation and machine shop
- Major appliance repair
- Metal fabrication
- Office machine repair
- Plastics and composites manufacturing occupations
- Printing and graphics occupations
- Product development, testing and demonstration
- Small appliance repair
- Technical illustration
- Waterfront manufacturing

Marketing, Sales, and Service
- International Trade
- Marketing
- Real Estate
- Retail occupations

Public Service
- Barbering
- Cosmetology
- Court reporting
- Fire control and safety
- Fire fighting
- Fire sprinkler installation
- Law enforcement occupations
- Locksmithing and safe repair
- Manicuring and pedicuring
- Motor sweeper operator
- Shoe repair
- Protective and security services

Transportation
- Automobile Detailing
- Automotive Body Repair and Refinishing
- Automotive Brake Installation and Repair
- Automotive Electrical Systems Service and Repair
- Automotive Heating and Air-Conditioning Service
- Automotive Mechanics
- Automotive parts counterperson
- Automotive Suspension and Steering Repair
- Automotive Transmission and Transaxle Service and Repair
- Avionics
- Bicycle repair
- Diesel equipment mechanics
- Electric Motor Repair
- Engine Performance Technician
- Heavy equipment maintenance and repair
- Industrial maintenance
- Motorcycle service and repair
- Railroad operations
- Small engine service and repair
- Tow truck operation
- Transportation occupations, travel services
- Truck and bus driving
- Warehousing
## Appendix C

### CTE Enrollment, Courses and Teachers

**2001-2007**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrollment</th>
<th># of Classes</th>
<th># FTE Teachers</th>
<th>Avg. Class Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agriculture Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>54,213</td>
<td>2,343</td>
<td>473.62</td>
<td>23.1</td>
</tr>
<tr>
<td>2005-2006</td>
<td>56,685</td>
<td>2,312</td>
<td>482.77</td>
<td>24.2</td>
</tr>
<tr>
<td>2004-2005</td>
<td>58,393</td>
<td>2,312</td>
<td>477.62</td>
<td>24.7</td>
</tr>
<tr>
<td>2003-2004</td>
<td>57,039</td>
<td>2,284</td>
<td>468.19</td>
<td>24.0</td>
</tr>
<tr>
<td>2002-2003</td>
<td>56,906</td>
<td>2,497</td>
<td>481.58</td>
<td>21.8</td>
</tr>
<tr>
<td>2001-2002</td>
<td>58,062</td>
<td>2,490</td>
<td>493.68</td>
<td>22.7</td>
</tr>
<tr>
<td><strong>Business- Marketing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>9,464</td>
<td>441</td>
<td>91.58</td>
<td>21.5</td>
</tr>
<tr>
<td>2005-2006</td>
<td>9,247</td>
<td>383</td>
<td>83.65</td>
<td>24.0</td>
</tr>
<tr>
<td>2004-2005</td>
<td>9,325</td>
<td>380</td>
<td>87.91</td>
<td>24.0</td>
</tr>
<tr>
<td>2003-2004</td>
<td>9,634</td>
<td>398</td>
<td>89.7</td>
<td>23.8</td>
</tr>
<tr>
<td>2002-2003</td>
<td>9,824</td>
<td>461</td>
<td>90.66</td>
<td>20.7</td>
</tr>
<tr>
<td>2001-2002</td>
<td>8,802</td>
<td>363</td>
<td>79.59</td>
<td>23.5</td>
</tr>
<tr>
<td><strong>Business Office</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>126,751</td>
<td>4,838</td>
<td>950.09</td>
<td>26.1</td>
</tr>
<tr>
<td>2005-2006</td>
<td>128,579</td>
<td>4,770</td>
<td>983.92</td>
<td>26.5</td>
</tr>
<tr>
<td>2004-2005</td>
<td>148,403</td>
<td>5,424</td>
<td>1,106.67</td>
<td>26.6</td>
</tr>
<tr>
<td>2003-2004</td>
<td>151,001</td>
<td>5,879</td>
<td>1,202.07</td>
<td>25.2</td>
</tr>
<tr>
<td>2002-2003</td>
<td>171,516</td>
<td>8,137</td>
<td>1,406.33</td>
<td>20.4</td>
</tr>
<tr>
<td>2001-2002</td>
<td>169,071</td>
<td>6,993</td>
<td>1,336.39</td>
<td>23.5</td>
</tr>
<tr>
<td><strong>Consumer-Home Economics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>109,682</td>
<td>4,082</td>
<td>783.47</td>
<td>26.7</td>
</tr>
<tr>
<td>2005-2006</td>
<td>118,415</td>
<td>4,293</td>
<td>854.36</td>
<td>27.2</td>
</tr>
<tr>
<td>2004-2005</td>
<td>123,095</td>
<td>4,349</td>
<td>863.7</td>
<td>27.8</td>
</tr>
<tr>
<td>2003-2004</td>
<td>126,867</td>
<td>4,485</td>
<td>899.74</td>
<td>27.5</td>
</tr>
<tr>
<td>2002-2003</td>
<td>137,126</td>
<td>5,180</td>
<td>953.02</td>
<td>25.5</td>
</tr>
<tr>
<td>2001-2002</td>
<td>140,462</td>
<td>5,157</td>
<td>994.29</td>
<td>26.3</td>
</tr>
<tr>
<td><strong>Health Careers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>12,953</td>
<td>501</td>
<td>108.37</td>
<td>25.9</td>
</tr>
<tr>
<td>2005-2006</td>
<td>11,980</td>
<td>413</td>
<td>92.89</td>
<td>28.2</td>
</tr>
<tr>
<td>2004-2005</td>
<td>12,716</td>
<td>451</td>
<td>90.17</td>
<td>27.5</td>
</tr>
<tr>
<td>2003-2004</td>
<td>11,148</td>
<td>410</td>
<td>90.2</td>
<td>26.5</td>
</tr>
<tr>
<td>2002-2003</td>
<td>6,877</td>
<td>373</td>
<td>51.25</td>
<td>17.3</td>
</tr>
<tr>
<td>2001-2002</td>
<td>5,797</td>
<td>232</td>
<td>52.91</td>
<td>23.3</td>
</tr>
<tr>
<td>Year</td>
<td>Total Enrollment</td>
<td># of Classes</td>
<td># FTE Teachers</td>
<td>Avg. Class Size</td>
</tr>
<tr>
<td>------------</td>
<td>------------------</td>
<td>--------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Home Economic Related Occupations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>35,166</td>
<td>1,496</td>
<td>304.74</td>
<td>23.5</td>
</tr>
<tr>
<td>2005-2006</td>
<td>33,357</td>
<td>1,370</td>
<td>289.64</td>
<td>24.0</td>
</tr>
<tr>
<td>2004-2005</td>
<td>32,381</td>
<td>1,289</td>
<td>270.15</td>
<td>24.6</td>
</tr>
<tr>
<td>2003-2004</td>
<td>30,950</td>
<td>1,221</td>
<td>255.23</td>
<td>24.3</td>
</tr>
<tr>
<td>2002-2003</td>
<td>33,230</td>
<td>1,478</td>
<td>267.77</td>
<td>21.7</td>
</tr>
<tr>
<td>2001-2002</td>
<td>32,863</td>
<td>1,338</td>
<td>271.05</td>
<td>23.5</td>
</tr>
<tr>
<td>Industrial Technology Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>52,067</td>
<td>2,199</td>
<td>435.95</td>
<td>23.6</td>
</tr>
<tr>
<td>2005-2006</td>
<td>54,166</td>
<td>2,189</td>
<td>456.67</td>
<td>24.3</td>
</tr>
<tr>
<td>2004-2005</td>
<td>57,021</td>
<td>2,238</td>
<td>459.35</td>
<td>24.8</td>
</tr>
<tr>
<td>2003-2004</td>
<td>59,654</td>
<td>2,322</td>
<td>482.1</td>
<td>24.8</td>
</tr>
<tr>
<td>2002-2003</td>
<td>61,000</td>
<td>2,532</td>
<td>481.55</td>
<td>23.3</td>
</tr>
<tr>
<td>2001-2002</td>
<td>60,994</td>
<td>2,516</td>
<td>505.7</td>
<td>23.5</td>
</tr>
<tr>
<td>Electronics Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>9,740</td>
<td>433</td>
<td>90.45</td>
<td>22.5</td>
</tr>
<tr>
<td>2005-2006</td>
<td>10,254</td>
<td>435</td>
<td>90.91</td>
<td>23.6</td>
</tr>
<tr>
<td>2004-2005</td>
<td>11,264</td>
<td>460</td>
<td>95.53</td>
<td>24.3</td>
</tr>
<tr>
<td>2003-2004</td>
<td>13,766</td>
<td>553</td>
<td>117.32</td>
<td>24.2</td>
</tr>
<tr>
<td>2002-2003</td>
<td>16,194</td>
<td>685</td>
<td>132.37</td>
<td>23.0</td>
</tr>
<tr>
<td>2001-2002</td>
<td>14,701</td>
<td>623</td>
<td>127.22</td>
<td>23.4</td>
</tr>
<tr>
<td>Electronics Manufacturing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>13,804</td>
<td>586</td>
<td>121.74</td>
<td>23.3</td>
</tr>
<tr>
<td>2005-2006</td>
<td>16,092</td>
<td>624</td>
<td>130.45</td>
<td>25.7</td>
</tr>
<tr>
<td>2004-2005</td>
<td>16,363</td>
<td>652</td>
<td>136.95</td>
<td>24.8</td>
</tr>
<tr>
<td>2003-2004</td>
<td>17,800</td>
<td>673</td>
<td>144.8</td>
<td>25.1</td>
</tr>
<tr>
<td>2002-2003</td>
<td>17,878</td>
<td>772</td>
<td>140.88</td>
<td>22.6</td>
</tr>
<tr>
<td>2001-2002</td>
<td>18,007</td>
<td>744</td>
<td>147.28</td>
<td>24.2</td>
</tr>
<tr>
<td>Explorations in Industrial Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>47,503</td>
<td>1,770</td>
<td>328.52</td>
<td>26.4</td>
</tr>
<tr>
<td>2005-2006</td>
<td>51,585</td>
<td>1,921</td>
<td>362.08</td>
<td>26.3</td>
</tr>
<tr>
<td>2004-2005</td>
<td>53,741</td>
<td>1,978</td>
<td>370.43</td>
<td>26.8</td>
</tr>
<tr>
<td>2003-2004</td>
<td>55,473</td>
<td>2,013</td>
<td>380.08</td>
<td>26.8</td>
</tr>
<tr>
<td>2002-2003</td>
<td>60,246</td>
<td>2,248</td>
<td>416.62</td>
<td>26.1</td>
</tr>
<tr>
<td>2001-2002</td>
<td>63,045</td>
<td>2,364</td>
<td>443.19</td>
<td>26.2</td>
</tr>
<tr>
<td>Power, Energy, Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>28,728</td>
<td>1,175</td>
<td>243.28</td>
<td>24.4</td>
</tr>
<tr>
<td>2005-2006</td>
<td>32,447</td>
<td>1,241</td>
<td>270.33</td>
<td>25.9</td>
</tr>
<tr>
<td>2004-2005</td>
<td>34,341</td>
<td>1,282</td>
<td>276.02</td>
<td>26.5</td>
</tr>
<tr>
<td>2003-2004</td>
<td>38,076</td>
<td>1,402</td>
<td>296.05</td>
<td>26.4</td>
</tr>
<tr>
<td>2002-2003</td>
<td>40,030</td>
<td>1,641</td>
<td>301.39</td>
<td>23.7</td>
</tr>
<tr>
<td>2001-2002</td>
<td>37,536</td>
<td>1,509</td>
<td>301.99</td>
<td>24.2</td>
</tr>
<tr>
<td>Year</td>
<td>Total Enrollment</td>
<td># of Classes</td>
<td># FTE Teachers</td>
<td>Avg. Class Size</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td>--------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Visual Communications, Drafting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>27,509</td>
<td>1,116</td>
<td>211.84</td>
<td>24.6</td>
</tr>
<tr>
<td>2005-2006</td>
<td>29,131</td>
<td>1,167</td>
<td>233.61</td>
<td>24.7</td>
</tr>
<tr>
<td>2004-2005</td>
<td>31,249</td>
<td>1,211</td>
<td>244.77</td>
<td>25.4</td>
</tr>
<tr>
<td>2003-2004</td>
<td>33,389</td>
<td>1,277</td>
<td>262.1</td>
<td>25.7</td>
</tr>
<tr>
<td>2002-2003</td>
<td>34,788</td>
<td>1,538</td>
<td>266.33</td>
<td>22.3</td>
</tr>
<tr>
<td>2001-2002</td>
<td>36,288</td>
<td>1,501</td>
<td>285.77</td>
<td>23.4</td>
</tr>
<tr>
<td><strong>Visual Communications, Graphics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>34,729</td>
<td>1,329</td>
<td>273.16</td>
<td>26.1</td>
</tr>
<tr>
<td>2005-2006</td>
<td>33,734</td>
<td>1,222</td>
<td>259.01</td>
<td>27.0</td>
</tr>
<tr>
<td>2004-2005</td>
<td>35,620</td>
<td>1,282</td>
<td>263.09</td>
<td>27.1</td>
</tr>
<tr>
<td>2003-2004</td>
<td>34,791</td>
<td>1,261</td>
<td>266.31</td>
<td>27.1</td>
</tr>
<tr>
<td>2002-2003</td>
<td>35,946</td>
<td>1,457</td>
<td>271.12</td>
<td>24.1</td>
</tr>
<tr>
<td>2001-2002</td>
<td>34,043</td>
<td>1,291</td>
<td>261.27</td>
<td>25.5</td>
</tr>
<tr>
<td><strong>Diversified Occupations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>5,952</td>
<td>393</td>
<td>77.3</td>
<td>15.0</td>
</tr>
<tr>
<td>2005-2006</td>
<td>5,000</td>
<td>269</td>
<td>63.44</td>
<td>17.0</td>
</tr>
<tr>
<td>2004-2005</td>
<td>5,404</td>
<td>284</td>
<td>65.11</td>
<td>17.3</td>
</tr>
<tr>
<td>2003-2004</td>
<td>4,632</td>
<td>252</td>
<td>58.2</td>
<td>18.1</td>
</tr>
<tr>
<td>2002-2003</td>
<td>6,197</td>
<td>384</td>
<td>70.32</td>
<td>15.8</td>
</tr>
<tr>
<td>2001-2002</td>
<td>5,139</td>
<td>247</td>
<td>59.49</td>
<td>20.2</td>
</tr>
<tr>
<td><strong>Applied Technology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-2007</td>
<td>14,972</td>
<td>545</td>
<td>106.63</td>
<td>27.3</td>
</tr>
<tr>
<td>2005-2006</td>
<td>14,288</td>
<td>501</td>
<td>103.12</td>
<td>27.9</td>
</tr>
<tr>
<td>2004-2005</td>
<td>15,592</td>
<td>549</td>
<td>115.37</td>
<td>27.3</td>
</tr>
<tr>
<td>2003-2004</td>
<td>15,486</td>
<td>552</td>
<td>116.67</td>
<td>27.4</td>
</tr>
<tr>
<td>2002-2003</td>
<td>18,555</td>
<td>706</td>
<td>133.74</td>
<td>25.6</td>
</tr>
<tr>
<td>2001-2002</td>
<td>21,363</td>
<td>746</td>
<td>149.35</td>
<td>27.0</td>
</tr>
</tbody>
</table>

*Source: California Department of Education*