

# Career Technical Education – An Overview

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## Executive Summary

State funding of career technical education at the high school and community college level has increased significantly since hitting recession-era lows and nearly 2 million California students are receiving some form of workforce training. In addition, the state is making a concerted effort to streamline and integrate the training programs and make them more responsive to regional business needs.

However, most categorical funding programs at the K-12 level have been eliminated and local school districts have far more discretion in how to allocate their Proposition 98 funding. While career readiness is one of the outcomes districts are required to demonstrate, advocates warn that funding at the local level is already dropping. A current dispute between the state and the L.A. Unified School District demonstrates that more funding could potentially be diverted to teachers' salaries and pensions instead of expensive CTE programs.

## Overview

State funding of career technical education has increased significantly during the past several years, both at the K-12 level and for community colleges. As EdSource put it earlier this year, "the state is pouring \$1.5 billion over five years into programs aimed at...better prepar(ing) students for college and careers."

The state operates numerous programs designed to provide workforce training for high school students and at the community college level. They include job search and career planning services along with courses that can lead to an industry-recognized certificate or that are part of an apprenticeship program.

In all, the Legislative Analyst's Office (LAO) estimates that the state spends approximately \$5.6 billion annually on workforce services, \$3.1 billion in state funds and another \$2.5 billion in federal funds. This, however, includes about \$1.45 billion in assisting welfare recipients move from welfare to work.

The two major agencies focusing on high school and secondary school workforce education are the California Community Colleges (CCC) and the Department of Education (DOE). CCC funding totals about \$2.1 billion a year (2016 estimate) while DOE spends nearly \$920 million on K-12 programs (2015 estimate). The two agencies jointly administer another \$444 million (2015 estimate).

Determining how many Californians these programs serve is difficult since various agencies collect information differently and numerous individuals receive services from multiple sources. The LAO estimates more than 2 million students receive some form of state-supported workforce education each year, which is in the ballpark of an estimate by Advance CTE, a national advocacy organization. That group says that in 2013-14, the most recent data available, about 970,000 California high school students and another 942,000 post-secondary students were enrolled in CTE classes.

## High School Programs

The state has established 15 industry sectors that high school-level CTE courses should focus on, along with their enrollment levels in 2012-13:

Agriculture	68,285
Arts, Media, and Entertainment	147,391
Building and Construction Trades	48,689
Business and Finance	87,983
Education, Child Development, and Family Services	76,770
Energy, Environment, and Utilities	9,404
Engineering and Architecture	39,220
Fashion and Interior Design	4,398
Health Science and Medical Technology	52,330
Hospitality, Tourism, and Recreation	33,602
Information and Communication Technologies	32,975
Manufacturing and Product Development	40,319
Marketing, Sales, and Service	18,333
Public Services	25,432
Transportation	36,683

Local districts provide CTE courses in several ways. Besides offering classes in technical training, some schools have established in-house academies that focus exclusively on technical training, integrating those classes with the required core curriculum. However, the 70 Regional Occupational Centers and Programs (ROCPs) are the largest high school CTE program. They provide regionally focused CTE during the school day, after school, and in evenings at high schools and regional centers. Districts apparently believe these programs are important because even during the recession, when spending on categorical programs became flexible due to extreme budget problems, schools continued to spend about 85 percent of their formerly restricted funds to support ROCP.

Before 2013-14, CTE programs were funded by some of the numerous categorical programs – pots of money earmarked for specific activities. However, a sweeping school funding reform that took effect at that time folded many categorical programs into the Local Control Funding Formula (LCFF), which gives school districts great flexibility on how to spend state funding based on local needs, while also requiring them to demonstrate that students are being educated for both college and career readiness. The new law mandated that funding for CTE be held roughly constant in the next two fiscal years, but beginning in 2015-16 those restrictions were abolished.

To help smooth the transition, beginning in 2015-16 the state established \$900 million in CTE Incentive Grants. These competitive grants are available to school districts, county offices of education, charter schools, and regional occupational centers and programs and require a dollar-for-dollar match and a commitment to continue support for CTE programs after the grants expire. \$400 million was provided in 2015-16, \$300 million in 2016-17, and \$200 million in 2017-18.

Beginning in 2012-13, nearly \$500 million was allocated over two fiscal years to K-12 and community college programs through the Career Pathways Trust. The 2015-16 budget extended the program for that fiscal year and allocated an additional \$48 million.

## **Post-Secondary Programs**

Post-secondary students have historically received training at adult schools run by school districts and at community colleges. Enrollment has plummeted at adult schools in recent years, in part because unlike ROCP programs, school boards slashed funding for them during the recession. As a result, about 60 percent of adults attend community colleges and less than 40 percent attend adult schools.

In an order to streamline often confusing CTE programs, the state is requiring colleges to coordinate CTE activities with seven existing regional consortia, which include all community colleges with each region. These macro regions are further subdivided into 15 sub-regions. They have been directed to collaborate with local workforce development boards, economic development and industry sector leaders, and representatives from civic and labor organizations. Going forward, 40 percent of CCC funding will go to the consortia and 60 percent directly to the community college districts.

Each region has established priority and emerging sectors that the region's community colleges are expected to align their courses with. For example, the Greater Sacramento Region has identified Agriculture, Water, and Environmental Technologies, Health, and Small Business as its priorities. The East Bay, on the other hand, has prioritized Advanced Manufacturing, Health, and Life Sciences/Biotech. Each sector has sector navigators, first contacts for both businesses and colleges.

In 2015, the state established a \$500 million annual Adult Education Block Grant divided up among K-12 and CCC programs. That year, K-12 received \$400 million and the colleges the remaining \$100 million. Effective this fiscal year, the funds are allocated based on the amount consortia received in the previous year, the region's needs for adult education, and the consortium's effectiveness in meeting those needs.

In addition, this year, the state created a new \$200 million annual allocation for CCC to expand CTE programs. Dubbed the Strong Workforce Program, it's designed to expand training in high-demand industry sectors. The budget also permanently allocates the \$48 million given last year to the Career Pathways program.

## **Potential Problems**

Despite these programs, some CTE advocates are already voicing concern that funding traditionally used for CTE will be diverted to other purposes. The California Association of Regional Occupational Centers and Programs (CAROCP), put it this way in a brochure distributed to members of the Legislature:

“As the Local Control Funding Formula is being implemented, we are seeing a decrease in resources being spent on Career Technical Education, in CTE course offerings and in CTE opportunities being provided to California students. These decreases are not happening in every county or district in the state, but are happening in most. There is no grand scheme to eliminate CTE opportunities to our students; in fact, that elimination would be counter to the Common Core State Standards adopted by California and would have significant negative impacts on California's economy and its future. However, the nature and the timing of the LCFF is working to eliminate those very CTE opportunities and

programs, like Regional Occupational Centers and Programs and Agricultural Education Programs, that have had tremendous successes in the past.”

And in a L.A. Times article on L.A. Unified School District’s decision to redirect \$450 million intended for English-learners, foster youth, and low-income students – a decision the state has determined to be invalid but which will likely go to court – U.C. Berkeley education professor Bruce Fuller warned that the test case has huge implications.

“If L.A. won on this point, every district in this state could then start to move money away from the designated kids” to other costs like teacher salaries or pensions, the article states.

## Examples of CTE Programs

The following courses were highlighted in an EdSource article earlier this year.

Students use flight simulators to learn to fly in an aviation career pathway in **Anaheim**. About 50 students are learning on six flight simulators, and the program also presents concepts in aviation and aerospace engineering. By the time they complete the program, students are ready to take the written tests for their pilots’ licenses.

The STEM Academy at Bernstein High School in **Hollywood** provides instruction in civil engineering and health care among other pathways, allowing students to also participate in park planning meetings and to work at a local Kaiser Permanente hospital.

Students in **Burbank** can use one of 23 3-D printers to build prototypes of projects, including small-scale models of architectural design.

At McBride High School in **Long Beach**, a classroom was converted into a full-scale replica of a medical clinic and students are mentored by staff members from Long Beach Memorial Hospital. By their senior year, some students will be eligible to apply for certification as emergency medical technicians or certified nursing assistants.

**Mount Shasta** High School created a manufacturing/business learning center that includes a welding pathway that features a manufacturing lab equipped with a plasma cutter and 12 welding booths. Students also learn AutoCAD and Solidworks design software.

A culinary arts program at **Lindhurst** High School in the Marysville district learn different aspects of food preparation in a professional-grade kitchen that will train them for jobs ranging from food servers to chefs.

And in **Elk Grove** the Pleasant Grove High School Digital Media Academy is a four-year pathway where students learn video production, editing, broadcasting and similar skills in a fully functional TV studio. They are mentored by professionals at KCRA.

Additionally, following are a selection of advanced manufacturing sector courses in the region running from Yuba City to Sacramento. Courses in this sector include welding, drafting, engineering and

agricultural mechanics. More information about many of these courses can be found on the Sierra College website <http://webcms.sierracollege.edu/> (use the Public Access link.)

### **American River College**

#### **Welding Technology – 37 Units**

The following coursework represents Welding Technology Certificate of Achievement requirements that when combined with general education requirements result in an AS. The coursework provides skills and knowledge in manual and semi-automatic welding processes used in the metal fabrication and construction industries. Instruction covers materials, equipment, welding procedures, testing techniques, inspection, welding metallurgy, blueprint reading, and welding safety. Competencies include techniques of joining ferrous and non-ferrous metals by the use of Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Gas Tungsten Arc Welding (GTAW). Oxyacetylene welding, oxyacetylene cutting and plasma arc cutting, are also covered.

### **Sierra College**

#### **Drafting & Engineering Support – 21.5 - 25 Units**

This curriculum "... is designed to prepare students for careers in industry as engineering support technicians who plan, prepare and interpret engineering sketches for design and drafting relative to mechanical and architectural designs, civil structures and developments, weldments, electronic circuits, or landscape architecture and design.

### **American River College**

#### **Electronics Certificates of Achievement**

American River offers certificates and an Electronics Systems Technology degree. The college offers eight skills certificates with specialty areas in Advanced Electronics and Telecommunications; Biomedical Equipment Technology; Digital Home Technology Integration; Digital Home Technology Integration; Fiber Optics; Robotics; and Telecommunication Specialist.

### **Sierra College**

#### **Mechatronics Certificates of Achievement**

In 2004 the Sierra College Computer Integrated Electronics program redesigned courses to become a Mechatronics program. Mechatronics is the study of electronics, mechanics, hydraulics, and pneumatics under computer control. The field includes robotics, industrial automation, industrial process control, and electro-mechanical systems integrated into one program. The Certificate of Achievement has 24 units. The Associate's degree also has 24 units, plus the general education requirement.

### **Yuba College**

#### **Manufacturing Technology Certificate of Achievement**

Yuba College offers the only Manufacturing Technology program in the North Region. It is described as, "Fabrication, assembly and repair of parts and components or systems on machines, such as lathes, grinders, drill presses, milling machines, and shaping machines. Includes Computer Numerical Control and tool design." The course catalog describes the program as a "comprehensive program of instruction designed to develop knowledge of scientific principle, mathematical concepts, and technical skills." The degree requires a combination of drafting, welding, and automotive courses to support manufacturing technology courses. The Associate degree has 30 required units plus general education units and the Certificate of Achievement requires 24 units. This certificate relies on combining the disciplines of automotive, drafting, and welding to round out the learning outcomes.

**Yuba College****Agricultural Mechanics Certificate of Accomplishment**

This new (proposal approved spring 2014) certificate offers a practical hands-on skill set required to fabricate and repair agriculture equipment. This program is included in the AMS curricular comparison due to the skills related to welding and automotive. The cross-disciplinary certificate has 24 required units. Courses include agricultural welding, hydraulics, manual drive trains/gas and diesel vehicles, and introduction to arc welding.

## References

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