

# Career and Technical Education

## Alaska Playbook



### RELEVANT PATHWAYS

Alaska offers numerous diesel technology programs, including on-road, heavy equipment, mining, and power generation.

### RECENT FUNDING

In FY2015 and FY2016, Alaska received \$4,214,921 in annual funds from the Perkins State Basic Grant.

### KEY STATE LEGISLATION

HB278, passed in 2014, requires institutions receiving Technical Vocational Education Program (TVEP) funding to have articulation agreements for dual-credit seeking high school students. HB266 appropriates funds for TVEP receipts and funds for business partnerships at Career and Technical Centers, at the Alaska Construction Academy, and for rural apprenticeships.

## State Basics

In Alaska, CTE is delivered at the secondary level through comprehensive high schools, CTE-specific high schools, public four-year universities, community colleges, one tribal college, and through Rural Training Centers targeted at adult learners. Alaska also operates at least one standards-based CTE program through its department of corrections at all times, including the opportunity for inmates to earn industry credentials. Articulation agreements are developed at the local program level, but all institutions receiving Technical and Vocational Education Program funding must develop agreements for dual-credit seekers. Alaska has one early college high school and the three public four-year universities (UA-Anchorage, UA-Fairbanks, and UA-Southeast) all offer dual-enrollment for high school students. The Board of Regents of the UA system has developed a common core of coursework to facilitate transfer between institutions. Middle-skill jobs currently account for 53% of Alaska's labor market, but only 50% of Alaskan workers have the necessary skills. By 2018, there will be 359,000 jobs in Alaska, and 60% will require some education and training beyond high school, including 37,000 technical certificates.

## Access Points

- Alaska Department of Education and Early Development (DEED)  
<https://education.alaska.gov>
- Alaska Department of Labor and Workforce Development  
<http://labor.alaska.gov>
- Alaska College & Career Pathways  
<http://www.alaskacte.org>

## Work-Based Learning

The Alaska DEED website has numerous resources related to Work-Based Learning, including a guide (published September 2003), rubrics establishing standards for student performance, rules and regulations pertaining to job shadowing, paid and unpaid internships, and other Work-Based Learning Opportunities, and forms to be completed by both students and employers. Employer forms include assessments of student performance, insurance and workers' compensation forms, and surveys of employer needs and willingness to participate in Work-Based Learning Programs.



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## ECONOMIC IMPACT

Increasing the share of Alaska's population with an Associate's Degree or Professional Certificate by 10 percentage points would lead to:

- An increase of \$1,558 in per capita income
- 2,500 fewer unemployed workers
- 3,800 fewer people living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Alaska Playbook



## Curriculum Development

The Alaska CTE website is still under construction, but existing pages include detailed information on different career pathways offered throughout the state University system, required coursework and useful skills and extracurricular activities, and information for students on how to prepare for a career in each cluster, including suggestions for connecting with employers. The Employer Engagement portion of the website is currently under development.

## Best Practices List

### Flexibility and Responsiveness

Localities wishing to offer CTE courses as part of the Alaska Performance Scholarship can submit programs to the state for approval. Local districts may develop detailed standards for CTE programs, as long as they meet state and industry benchmarks.

### Academic Integration with CTE

Alaska's Department of Education and Early Development is developing a CTE track for the rigorous Alaska Performance Scholarship and more generally embedding math into CTE programs. Alaska participates in the National Research Center for CTE's Math-in-CTE program, and is constructing career academies that integrate core academic coursework around a career theme.

### Funding Type and Formulas

Alaska uses categorical funding, weighted by student (1.015 for CTE Students), at the secondary level and general allocation at the postsecondary level

## Workforce Development

Alaska's Department of Labor and Workforce Development (DOLWD) includes the Alaska Job Center Network (<http://www.jobs.state.ak.us/offices/>), which allows employers to recruit workers by matching up business needs with employee skill sets. Alaska's Workforce Development Enterprise offers employers the opportunity to register as licensed training providers for CTE training, and includes a research database of existing training providers and outcomes. The DOLWD website also offers workforce advisories, notices, policies, and federal Training and Employment Guidance Letters. Finally, the site provides detailed information on current training programs being offered.

## Additional Resources

- Information on the Diesel/Heavy Equipment Pathway from the Alaska CTE website
- <http://www.alaskacte.org/wp-content/uploads/2014/06/UAF-Diesel-Heavy-Equipment.pdf>
- CareerTech.org Alaska state snapshot
- [https://www.careertech.org/sites/default/files/Alaska\\_CTEFactSheet2015.pdf](https://www.careertech.org/sites/default/files/Alaska_CTEFactSheet2015.pdf)
- ACTE Online State Profiles Page
- <https://www.acteonline.org/stateprofiles/>
- Alaska Labor Laws and regulations
- <http://labor.alaska.gov/lss/>
- Alaska state CTE plan
- <http://s3.amazonaws.com/PCRN/docs/stateplan/AK5YearStatePlan.pdf>
- Alaska Workforce Investment Board
- <http://www.labor.state.ak.us/awib/>
- University of Alaska System (public four-year universities and community colleges)
- <http://www.alaska.edu/alaska/>



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# Career and Technical Education

## Alabama Playbook



### State Basics

Alabama delivers CTE at the secondary level through comprehensive high schools and regional technical centers. At the postsecondary level CTE is available through the Alabama Community College System (ACCS) where students enjoy state-wide articulation agreements for specific CTE coursework taken in high school. Postsecondary CTE is also available through workforce initiatives, such as the Alabama Industrial Development Training Institute (AIDT) which provides pre-employment and on the job training as well as employment connections for businesses seeking workers with CTE training. Alabama also collaborates with the Southern Regional Education Board, participating in their Technology Centers that Work program, which focuses on developing productive CTE Centers. The Alabama Department of Education annually develops professional development plans to emphasize the needs of the community as well as to address gaps in curriculum. Educators also can exchange educational resources on the Alabama Learning Exchange (ALEX) website. Development conferences are also hosted by both the Alabama Department of Education and Alabama ACTE. The ACCS provides similar resources for Postsecondary educators.

### RELEVANT PATHWAYS

Alabama has adopted the Career Clusters framework. It has relevant Construction and Welding Pathways under the Architecture and Construction Cluster, and machinery pathways under the Manufacturing Cluster.

### RECENT FUNDING

Alabama received an estimated \$19,175,065 in Perkins Basic State Grant funds in FY2015 and FY2016

### KEY STATE DOCUMENTS

- State Dept. of Education Administrative Code 290-6-1 (CTE Code) Is the administrative code adopted by the State Board of Education and details the framework of CTE education in the Alabama School System.
- Handbook for Career and Technical Education Local Partnering (Partnership Handbook) acts as a guide for establishing partnerships between industry businesses and CTE programs, educators and students.
- The Alabama Work Based Learning Manual outlines the process of implementing a work based learning aspect into CTE curriculum and the necessary state requirements.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Local CTE System Councils
- Local CTE Program/Cluster Committees
- AIDT
- Work-Based Learning
- Educational-Industry Partnerships

## Local CTE Advisory Councils & Committees

Established to serve as a local mechanism to adjust CTE programming to regional and local needs, the advisory councils and committees are comprised of business and industry representatives, educators, and members of the community with relevant experience. The local council oversees the entire local CTE system, while committees act to advise specific programs. Committees help to advise and develop program curriculum, coordinate efforts to promote CTE within the local school district, and help establish Educational-Industry Partnerships between private businesses and school districts.



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# Alabama Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 60 percent of Alabama’s labor market, but only 47 percent of workers in Alabama possess the required skills.”

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 14,600 fewer unemployed individuals
- 35,500 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## AIDT

This independent agency operates under the oversight of the Secretary of Commerce and primarily focuses on workforce development through pre-employment and on the job (OTJ) training. It is the first workforce development organization to receive ISO 9001:2008 certification for its quality management system. This certification attests AIDT’s process and management systems ability to produce efficient and effective results. By partnering with private businesses, AIDT is able to match qualified workers with the specific technical needs of businesses while also providing any necessary training, at little to no cost. Independent training is also available to workers who may be seeking employment with other businesses not partnered with AIDT. Training is available both at regional centers located throughout the state as well as via Mobile Training Units which travel directly to businesses for on-site instruction. The specific technical focuses of AIDT training is determined by periodic evaluation of critical industries in the state.

## Educational-Industry Partnerships

Seeking to further bridge the gap between the private sector and the educational system, Educational-Industry Partnerships emphasize a less formal connection between industry businesses and the educational system than that of the CTE committees. Instead, these individual partnerships allow local businesses to reach out to local schools to give input to CTE courses, increases visibility for career opportunities in CTE, provide work-based learning experiences to students, and establish linkages for recruitment.

## Work-Based Learning

Alabama’s Work-Based Learning Program allows students to engage in hands on work experience that would not otherwise be available to students in a traditional classroom setting. This program is available to 11<sup>th</sup> and 12<sup>th</sup> grade CTE students and must be supervised by a licensed CTE instructor with previous instructional experience in CTE. Local Education Agencies (LEAs) oversee the administration of these programs and ensure that all experiences comply with state guidelines and fulfill educational requirements. Businesses that have formed Educational-Industry Partnerships may utilize this relationship to facilitate these opportunities by providing educators with the environment and equipment necessary for these work-based opportunities. Further, businesses can use these work-based opportunities to ensure particular skills development and as a means of recruiting potential workers following graduation.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Alabama>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- CTE Code
  - <http://www.alabamaadministrativecode.state.al.us/docs/ed/McWord290-6-1.pdf>
- Partnership Handbook
  - [https://www.alsde.edu/sec/cte/Resources/Handbook\\_for\\_CTE\\_Local\\_Partnering\\_2012Updated.pdf](https://www.alsde.edu/sec/cte/Resources/Handbook_for_CTE_Local_Partnering_2012Updated.pdf)
- Alabama Work Based Learning Manual
  - <https://www.alsde.edu/sec/cte/WBL/W-B-L%20MANUAL.docx>
- AIDT Workforce Development Initiative:
  - <http://www.aidt.edu/business-services/>



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# Career and Technical Education

## Arkansas Playbook



### RELEVANT PATHWAYS

- Manufacturing Cluster:  
Industrial Equipment  
Maintenance
- Transportation, Distribution,  
& Logistics Cluster: Diesel  
Mechanics

### RECENT FUNDING

- \$11,403,795 Perkins
- State funding to CTE  
centers at \$3,250 per student  
with 60% cap if more than  
60% are from a single  
sending school

### KEY STATE LEGISLATION

- Roger Phillips Transfer Act:  
Allows associate degree  
holders to be admitted as  
juniors
- AR Higher Education  
Coordinating Board  
Concurrent Enrollment Policy
- Section 122(a)(2)(A):  
Funding to individuals in state  
correctional facilities

## State Basics

In Arkansas, secondary CTE programs are delivered through comprehensive high schools and Secondary Area Career Centers. At the postsecondary level, CTE programs are delivered through community colleges and three technical institutes. The basic state grant also provides funds to for individuals in state correctional facilities or in state facilities that serve individuals with disabilities. Arkansas has created a Curriculum Framework for all CTE courses that provide content standards based on relevant, in-demand career skills. Dual and concurrent enrollment programs are available for high school students to earn college credit while completing high school coursework. The Arkansas Early College High School also offers distance learning opportunities for secondary students.

## Access Points

The following are opportunities for employers to become involved:

- Existing Program Review Committees
- Working with Career Coaches at local schools
- Arkansas College and Career Planning System
- Work-Based Learning, Internships, Apprenticeships
- Regional Consortia Planning Committees: Include economic developers and industry representatives

## Career Readiness Certificate

Arkansas issues a state Career Readiness Certificate (CRC) to individuals who successfully complete the WorkKeys assessments. The certification indicates that the person possesses the basic workplace skills required for 21st century jobs. The CRC is obtained in addition to a high school diploma, GED, or post-secondary degree to demonstrate that an individual can read directions and instructions, find information, and work with figures.



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## ECONOMIC IMPACT

By 2018, 58% of all Arkansas jobs will require some training beyond high school, including 150,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$630 higher median per capita income
- 4,300 fewer unemployed
- 15,900 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Arkansas Playbook



## Future Regional Input

Arkansas has developed guidelines for implementing Regional Advisory Councils. The goal with such councils is to develop partnerships with regional employers and to demonstrate to those employers that students will receive relevant training in the school system. The councils would also allow expedient responses to changing market forces and ensure that student training remains relevant. This developing regional focus provides an excellent opportunity for AED-affiliated employers to have a say in local curriculum development. State developments in this area should be closely monitored and AED may wish to reach out to the state directly to encourage the rapid development of regional councils.

## Best Practices List

### Career Services System

- The Arkansas College and Career Planning System website works to connect students with high-demand career paths. Employers are able to create a profile and post job openings and learning opportunities.

### Intermediaries for Work-Based Learning

- The Arkansas Apprenticeship website provides students with current skilled trade opportunities and indicates what certifications are required to obtain positions.

## State Responsiveness to Current Demand

State leadership in Arkansas works closely with the Department of Workforce Services to identify career pathways that are high-skill, high-wage, and high-demand. The state operates an Existing Program Review Committee that conducts a regular review of existing programs offered by all public postsecondary institutions. Each program is reviewed on a 7 to 10-year cycle. This process is intended to keep state programs current and fulfilling labor market demand. However, 7 to 10 years is a long period of time when it comes to changes in technology and the state economy. Arkansas should consider evaluating programs more frequently in order to properly respond to market changes and provide their students with the best chance at gaining meaningful skills and consistent employment.

Career centers on local school campuses enable local officials to quickly respond to local employment needs. This is a solid step toward maintaining relevant curriculum, but would benefit from a state-wide review system that updates standards more often.

## Additional Resources

- State Snapshot: [https://careertech.org/sites/default/files/pictures/Arkansas\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Arkansas_CTESnapshot2015.pdf)
- State Plan: [http://s3.amazonaws.com/PCRN/docs/stateplan/ar\\_state\\_plan\\_2008-2013.pdf](http://s3.amazonaws.com/PCRN/docs/stateplan/ar_state_plan_2008-2013.pdf)
- Arkansas Career Readiness Certification: <http://dws.arkansas.gov/Programs/CRC/>
- Arkansas CTE: <http://ace.arkansas.gov/cte/pages/default.aspx>



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# Career and Technical Education

## Arizona Playbook



### State Basics

Secondary CTE in Arizona is delivered through comprehensive high schools or through Joint Technical Education Districts (JTEDs), which are combined projects of two or more school districts to develop consolidated CTE programs. JTEDs receive more funding per student than conventional school districts and aim to pool resources to provide a higher level of education. At the postsecondary level, CTE is delivered via ten community colleges and numerous private technical colleges. Dual-enrollment programs exist at state two-year and four-year universities, and universities and community colleges are required to adopt rules allowing the enrollment of qualified high school students. Arizona also offers several Early College High Schools, where students can graduate with a high school diploma and two years' worth of college coursework. Arizona has a significant skills gap, as middle-skill jobs account for 53% of Arizona's labor market, but only 47% of workers possess the required skills. By 2018, Arizona will have 3,130,000 jobs, 61% of which will require post-secondary education, including 300,000 certificates.

### RELEVANT PATHWAYS

Diesel Engine Repair,  
Heavy Equipment  
Operations,  
Heavy/Industrial Equipment  
Maintenance Technologies

### RECENT FUNDING

Arizona received \$25,325,281 in FY2015 and \$25,810,035 in FY2016 in Perkins Act Funding. At the secondary level, the state uses Categorical Funding (differential weighting) and at the postsecondary level Arizona uses General Allocation funding. In 2015 the state legislature permanently cut CTE funding by \$29 million.

### KEY STATE LEGISLATION

In 2012, the Arizona STEM Network launched. This network aims to integrate STEM learning into schools and districts using predictive analytics, improve teacher effectiveness, and increase opportunities for partnerships with private businesses.

## Access Points

- Work-Based Learning Handbook on the Arizona State Education website  
<http://www.azed.gov/search-results/?q=work%20based%20learning>
- Arizona Workforce Development Website  
<http://www.arizonaatwork.com/employers-overview/>
- Website describing the development of K-12 Educational Standards  
<http://www.azed.gov/standards-practices/>

## Work-Based Learning

Secondary CTE programs in Arizona usually include a Work-Based Learning (WBL). In addition to high school students seeking out individual worksites for potential WBL experiences, local school districts often mail interest forms to local businesses to establish a pool of potential worksites. Employers are provided an opportunity to interview prospective students to ensure a good match. Employers are also given a briefing on their legal responsibilities, instructions for working with young people, a checklist of learning requirements, and evaluation materials



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## ECONOMIC IMPACT

Increasing the number of Arizona residents with an Associate's Degree or Certificate by ten percentage points would result in:

- A \$1,110 increase in median per capita income
- 16,700 fewer unemployed workers
- 54,000 fewer people living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Arizona Playbook



## Curriculum Development

All CTE Pathways in Arizona use industry-validated standards and award industry-recognized certifications for students who complete the career pathway. A comprehensive program review of the standards, coursework, equipment, and apprenticeship and work-based learning aspects of state CTE programs finished in September 2016. For example, Diesel Engine Repair students partake in the Transportation Technologies Core Curriculum, two specialized courses in Diesel Engine Mechanics, and either an internship or a Diesel Engine Repair Cooperative Education experience. The course standards are based on the recommendations of the National Automotive Technicians Education Foundation (NATEF) and Automotive Services Excellence (ASE) standards.

## Best Practices List

### Academic-CTE Integration

Arizona CTE courses place a heavy emphasis on mathematics and related subjects. The state participates in the nationwide Math-in-CTE program, and CTE courses and schools are included in the STEMaz initiative designed to improve math and science education across the state.

### Articulation Agreements/Postsecondary Alignment

The Arizona Technology Council Board of Directors has been working on state-wide and industry-wide articulation agreements for several high-tech industries, including robotics, manufacturing, aerospace, and engineering. Students can find information on other articulation agreements via the Arizona Transfer website. Arizona Community Colleges use a common course numbering system to facilitate transfers among institutions.

### Employer Participation in Standards Development

Arizona's education website includes a guide for designing CTE Programs of Study with stakeholder collaboration.

## Workforce Development

The Arizona@Work website offers resources for job-seekers as well as employers seeking skilled workers. A project of the Workforce Innovation and Opportunity Act, Arizona@Work uses networks of local representatives to provide customized recruitment services, employee development programs, and business support resources. Recruitment services include access to the largest job posting website in the state, <http://www.azjobconnection.gov/>, candidate matching and pre-screening, skills assessments of applicants, hiring events to help employers meet job seekers, and other customized services such as interview spaces. Business support services include analysis of state labor market trends, information on tax credits and incentives available to businesses, and rapid response services for firms anticipating downsizing or restructuring. Arizona@Work also offers job-specific skills training and on-the-job training, and can develop customized job training programs or connect workers and employers through apprenticeships.

## Additional Resources

- Arizona's Five-Year State CTE Plan
- <http://www.azed.gov/wp-content/uploads/PDF/StatePlan.pdf>
- Technical Standards for Arizona CTE Pathways
- <http://www.azed.gov/career-technical-education/tech-standards/#DieselEngineRepair>
- ACTE Online
- <https://www.acteonline.org/stateprofiles/>
- Advance CTE
- <https://www.careertech.org>
- Arizona Department of Career & Technical Education
- <http://www.azed.gov/career-technical-education/>
- Arizona Program of Study Implementation Guide
- <http://www.azed.gov/career-technical-education/files/2014/05/program-of-study-development-and-implementation-guide-revised-april-2014.pdf>



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## RELEVANT PATHWAYS

Agricultural Mechanics,  
Engineering & Heavy  
Construction, Mechanical  
Systems Installation &  
Repair

## RECENT FUNDING

California received \$122,943,598 in Perkins Act funding in both FY2015 and FY2016. At the state level, California uses a competitive grant program for secondary CTE funding and general allocation funding for postsecondary CTE.

## KEY STATE LEGISLATION

AB288 (2015) allows school districts and community colleges to enter into a College & Career Access Pathways partnership to increase dual enrollment opportunities and enhance CTE pathways.

California Partnership Academies provide secondary students with three years of rigorous CTE and include mandatory industry partnerships. 50% of students at CPAs come from at-risk backgrounds.

## California Playbook



## State Basics

CTE in California is delivered in a variety of settings, including comprehensive high schools (often with CTE magnet programs), partnership academies that integrate traditional academics around a career theme, adult schools, community colleges, and Regional Occupational Centers and Programs (ROCPs), which offer extra-curricular CTE training to both students and adult learners in a variety of settings, including college campuses, high schools, and workplaces. California places a strong emphasis on articulation and alignment; all school districts receiving Section 131 and 132 funds from the state must have articulation agreements between the secondary and postsecondary levels, and community colleges across the state use common course numbering to facilitate transfer. California has a significant skills gap, as 50% of the state's labor market consists of middle-skill jobs, but only 40% of the workforce possesses the requisite skills. By 2018, there will be 18.88 million jobs in the California economy, 60% of which will require postsecondary education, including 1.7 million certificates.

## Access Points

- ConnectEd Work-Based Learning (by the California Center for College and Career)  
[http://www.connectedcalifornia.org/curriculum/work\\_based\\_learning](http://www.connectedcalifornia.org/curriculum/work_based_learning)
- Workforce Development: California Workforce Association  
<http://www.calworkforce.org>
- Curriculum Development: California Department of Education  
<http://www.cde.ca.gov/index.asp>

## Work-Based Learning

California strongly emphasizes Work-Based Learning in its CTE programs. At the CTE-centered California Partnership Academies, Work-Based Learning is a required part of the program for concentrators in all fifteen industry sectors. Additionally, the ConnectEd California website includes many informational resources on Work-Based Learning in California, including an internship handbook, a mentor handbook, opportunities for expansion, and a LaunchPad Employer Toolkit to match students with work opportunities, among others.



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## ECONOMIC IMPACT

Increasing the share of the California population with an associate's degree or technical certificate by ten percentage points would result in:

- A \$1,462 increase in median per capita income
- 67,000 fewer unemployed individuals
- 267,000 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

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# California Playbook



## Curriculum Development

In May 2011, California began updating its CTE curriculum standards with input from 117 experts from business, industry, and secondary and postsecondary education. After the recommendations of this group, the California Department of Education held further meetings with industry sector representatives to develop new standards based on those recommendations. The new standards were formally adopted in January 2013.

### BEST PRACTICES

#### Flexibility in Curriculum Development

- The University of California Curriculum Integration Initiative (UCCI) brings together industry representatives and secondary CTE teachers to develop rigorous new CTE courses that are aligned to the most recent standards

#### Professional Development Opportunities

- California offers a multitude of professional development opportunities for CTE instructors, including professional and industry conferences put on by California ACTE, the UCCI, the CTE TEACH program for supporting California CTE teachers, and multiple community college professional development activities. These include advisory committees, regional consortia, externships, and five days of "flexible professional development" each year paid for by the state.

## Workforce Development

The California Workforce Development Board offers numerous opportunities for businesses to become involved with CTE and to find skilled technicians. The Community Colleges Economic and Workforce Development (EWD) page outlines opportunities for businesses to partner with postsecondary institutions in California for workforce solutions, sortable by industry. EWD also offers industry-specific workforce services aligned to the needs of industry sectors, including specialized industry training, technical consulting, and business development. These services are administered at the regional level by Deputy Sector Navigators, and the website offers a clickable map to help businesses find services in their region. Businesses can even have customized training programs developed that are tailored to their specific needs. More general state-funded training is awarded on a competitive basis through the Job Development Incentive Fund (JDIF), Industry Driven Regional Collaboratives (IDRC), and the Responsive Training Fund (RTF). Finally, EWD offers the California Corporate College, which partners with community colleges to bring market relevant workforce preparation to employers, and the Employment Training Panel (ETP), a business and labor-supported state agency that helps employers defray the costs of job-training employees. ETP is performance based and is funded by the Employment Training Tax paid by California employers.

## Additional Resources

- California Community Colleges Economic and Workforce Development site  
<http://www.cccewd.net>
- Employment Training Panel website  
<https://www.etp.ca.gov>
- Description of the CTE curriculum development process and industry-specific PDFs describing the new standards  
<http://www.cde.ca.gov/ci/ct/sf/ctemcstandards.asp>
- UCCI homepage  
<http://ucci.ucop.edu/about/index.html>
- California ACTE  
<https://www.acteonline.org/california/#.WDD9mccmXdk>



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# Career and Technical Education

## Colorado Playbook



### RELEVANT PATHWAYS

Colorado has pathways in “Maintenance & Operations” in the Architecture & Construction career cluster and in “Maintenance, Installation, & Repair” in the Manufacturing cluster.

### RECENT FUNDING

In FY2015, Colorado received \$16,027,836 in Perkins Basic State Grant funding. In FY2016 the state received \$16,167,237 in funding.

### KEY STATE LEGISLATION

HB1170 (2015) adds a performance indicator measuring the percentage of graduating students who immediately enroll in a CTE program, community college, or four-year university.

HB1274 directs Colorado's Workforce Development Council to collaborate with the Community College System and other stakeholders to develop career pathways for in-demand industries like construction and health care.

## State Basics

Colorado provides secondary CTE through comprehensive high schools and technical centers, and postsecondary CTE through the Colorado Community College System, local district colleges, and area technical colleges. Colorado also offers CTE to both youth and adult offenders within the Department of Corrections. Colorado determines concurrent enrollment agreements at the district level, but options include Advanced Credit Pathways that allow students to accumulate CTE credits and transfer them to community colleges, as well as Early College Charter Schools. Colorado has also developed statewide secondary-postsecondary articulation agreements for several subjects, although only engineering is represented among CTE subjects. Colorado has a substantial skills gap, as 50% of jobs in the state are middle-skill jobs, but only 42% of workers possess the necessary skills. By 2018, Colorado will have 3,188,000 jobs, of which 60% will require postsecondary education or training and 312,000 of which will require a certificate.

## Access Points

- Work-Based Learning: Colorado Manufacturing Careers  
<http://coloradomanufacturingcareers.com/resources-policies.html>
- Colorado Workforce Development Council  
<https://www.colorado.gov/cwdc>
- Curriculum Development Committee: Colorado State Plan  
<http://coloradostateplan.com>

## Work-Based Learning

Colorado Manufacturing Careers offers an extensively detailed document explaining how to set up work-based learning options in Colorado, including registered apprenticeships, youth apprenticeships, job shadowing, and mentoring. The document, called “How to Manage Work-Based Learning K-20”, also offers guidance on state and federal labor laws, the roles and responsibilities of all parties involved in the program (including educators and business), and an appendix with examples of all relevant documents taken from both Colorado and other states. It is available at the address provided on the reverse page. Existing work-based learning programs are coordinated at the local level. A link to the Denver Public Schools’ extensive program is under the “Additional Resources” header on the next page.



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## ECONOMIC IMPACT

If Colorado increased the number of its citizens holding an associate's degree or professional certification by 10 percentage points, the state would have:

- A \$965 increase in median per capita income
- 9,500 fewer unemployed individuals
- 32,700 fewer people living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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Development Council  
Business-Experiential  
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# Colorado Playbook



## Curriculum Development

Curriculum development is handled primarily at the institutional level, but standards are set by the state, and the Colorado State Plan website offers extensive guidance on CTE best practices, educator development, academic integration, and skills assessments. The State Plan website also includes an Advisory Committee Handbook to help schools and businesses set up curriculum and standards advisory committees for school CTE programs.

### BEST PRACTICES

#### Local Flexibility

Colorado offers 81 existing CTE Career Pathways and offers online resources for teachers to develop new programs of study in line with existing standards and business and industry guidance.

#### Career Services

CareerReady Colorado includes resources for students and job seekers to certify their skills. Additionally, Colorado requires that all secondary students, including CTE students, have an Individual Career and Academic Plan for life after high school.

#### Opportunities for Industry Involvement

Colorado is actively trying to recruit professionals with business and industry experience to become CTE teachers, per ACTE Online ([www.acteonline.org](http://www.acteonline.org))

## Workforce Development

The Colorado Workforce Development Council (CWDC) offers numerous resources to help both prospective job seekers and prospective employers. The Colorado Talent Pipeline Report includes information on emerging jobs and industries and overviews of ongoing talent development initiatives and industry partnerships. The Business Experiential-Learning Commission (BEL) provides coordination between businesses and schools looking to establish work-based learning programs, career services for students and apprentices to document skills and knowledge, and is working on an information portal to connect employers and job seekers with internship and career opportunities. The CWDC also operates 13 comprehensive workforce development centers in 10 regions across the state that act as clearinghouses for information and resources for all programs, services, and activities offered by CWDC in the area. Finally, the CWDC website includes guides in PDF and slide show form for local workforce investment boards and a primer on the Workforce Investment Act of 1998 and its subsequent amendments.

## Additional Resources

- Colorado Manufacturing Careers Work-Based Learning PDF:
- <http://coloradomanufacturingcareers.com/documents/Comparedv6xyz.pdf>
- Colorado Department of Education website:
- <https://www.cde.state.co.us/cdesped/stw>
- Denver Public Schools Work-Based Learning Website:
- <http://www.dpscareerconnect.org/welcome/about-us/work-based-learning-opportunities/>
- CWDC BEL Commission:
- <https://www.colorado.gov/pacific/cwdc/bel-commission>
- Advisory Committee Handbook
- <http://coloradostateplan.com/administrator/advisory-committee/>



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# Career and Technical Education

## Connecticut Playbook



### RELEVANT COURSES

Connecticut uses the nationally recognized Career Clusters framework. At the secondary level, the Transportation, Distribution, and Logistics Cluster includes a Diesel and Heavy-Duty Equipment Repair program. The postsecondary level offers training in automotive technology.

### RECENT FUNDING

Connecticut received an estimated \$9,487,263 in Perkins Basic State Grant funds in FY 2015; 81% of these funds were distributed to secondary schools and 19% were distributed to postsecondary schools. CT received an estimated \$9,558,249 in Perkins funding in 2016.

### KEY STATE DOCUMENTS

- *CTHSS Program of Studies 2015-2016*
- *CTHSS Strategic Plan Annual Report 2015-2016*
- *CTHSS Strategic Action Plan 2014-2017*

### State Basics

CTE in Connecticut is delivered at the secondary level through comprehensive high schools as well as through the Connecticut Technical High School System (CTHSS). CTHSS operates 17 regional technical high schools that provide CTE for full-time high school students as well as training for adult students. CT also operates 19 Agriculture Science and Technology Education Centers. The community college system offers CTE courses at the postsecondary level and maintains articulation agreements/concurrent enrollment opportunities at the local level. CTE providers in CT are also making efforts to integrate traditional academics into CTE delivery; according to ACTE, "standards for Business Finance Technology, Agriculture, Medical Careers, Technology Education and Family Consumer Sciences have been aligned to the mathematics and English language arts Common Core State Standards, with related professional development, [and] academic and CTE integration is also pursued through the design of Student Success Plans."

CT offers members of industry and business some opportunities to participate in the delivery of CTE. Student-based opportunities exist, including but not limited to various forms of work-based learning and equipment donation. Furthermore, businesses and members of industry can participate with CTHSS to directly affect what students are learning and how to translate skills into the labor force. These opportunities are explored throughout the rest of this document.

### Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- CTHSS offers work-based learning opportunities at all of its locations.
- CTHSS on-site opportunities
- Advocate for expansion of a College Career Pathway
- Career Technical Education Advisory Committees

### Work-Based Learning

The Connecticut Technical High School System provides Work-Based Learning opportunities at all of its schools. Students receive both credit and payment for their efforts, and the experiences result in an opportunity to connect with potential future employers.

Employers should contact their local technical high school about participation in a Work-Based Learning training experience in a relevant career pathway.

Employers must meet strict requirements in order to provide WBL opportunities. Interested parties should begin by referring to federal labor laws and by consulting technical high schools. Federal guidelines bar minors from participating in certain hazardous occupations, and CT also maintains its own child labor provisions. CT provides exceptions for certain types of hazardous occupations and specific classes of minors; this information can be found in Title 31, Chapter 557, Section 31-23 of the CT State Code.



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# Connecticut Playbook



## CTHSS Campus Opportunities

Businesses and members of industry can contribute directly by contributing equipment to schools for instructional purposes. They may also encourage and participate in Student Workforce programs such as the Diesel and Heavy Duty Equipment Repair services found at Howell Cheney Technical High School in Manchester. This program provides an opportunity for students to gain hands-on experience in a quasi-business setting. While not intended to supplant the demand for traditional businesses, these programs can be useful in exposing students to real-world business practices in a school-setting.

## College Career Pathway Advocacy

Apart from participating in CTE Advisory Committees and Work-Based Learning opportunities, members of business and industry can advocate for the development or expansion of Career Pathways. Currently, the community college system limits each community college to operating a maximum of five pathways in a given academic year. Therefore, the decision to create a CCP (articulation) agreement between a high school and a community college depends heavily upon labor force information and a demonstrated need. Businesses can increase the likelihood of the development of a relevant career pathway by working with state labor officials and demonstrating a shortage of skilled workers in their respective sector. Furthermore, they should encourage schools to explore allowable exceptions for CCP agreements when their local community college does not offer a course that a high school wishes to articulate.

## CTE Advisory Committees

According to the *CTHSS Strategic Action Plan 2014-2017*, "CTHSS will be aligned with and respond to the needs of employers and the economic development priorities of the state through the development of corporate partnerships." One way by which CT facilitates these partnerships is through CTE Advisory Committees (CTEAC), bodies comprised of stakeholders from education and business. Through CTEAC, business and industry representatives help ensure the quality of CTE by "revising/enhancing curricula, reviewing of facilities, and the acquisition of state-of-the-art technology." Furthermore, as a part of CTEAC, members of business and industry "advise the CTHSS on issues that impact the career technical education program, occupational outlook, workplace credentials and industry skills." Committees meet at least twice a year in order to consider issues affecting CTE delivery in CTHSS. CTEAC represents a front-line opportunity for business and industry leaders to shape the outlook of CTE delivery in CT. The ability to contribute to the direction of the state's economic development plans and shape the delivery of CTE make CTEAC a key access point for business and industry leaders.

## Additional Resources

- College Career Pathways Guidelines:
  - [http://www.sde.ct.gov/sde/lib/sde/pdf/deps/career/ct\\_ccp\\_guidelines.pdf](http://www.sde.ct.gov/sde/lib/sde/pdf/deps/career/ct_ccp_guidelines.pdf)
- Current College Career Pathways:
  - [http://www.sde.ct.gov/sde/lib/sde/pdf/deps/career/ct\\_ccp\\_guidelines.pdf](http://www.sde.ct.gov/sde/lib/sde/pdf/deps/career/ct_ccp_guidelines.pdf)
- Advance CTE State Profiles
  - <https://www.careertech.org/Connecticut>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- CTHSS Diesel and Heavy-Duty Equipment Repair Info.
  - <https://www.cttech.org/programs/career-technical-education/transportation-distribution-logistics/diesel-heavy-duty-equipment-repair>
- United States Department of Labor Information
  - <https://www.dol.gov/whd/childlabor.htm>
- Connecticut Employment Regulation
  - [https://www.cga.ct.gov/current/pub/chap\\_557.htm](https://www.cga.ct.gov/current/pub/chap_557.htm)



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### LABOR IMPACT

Per Advance CTE, "middle-skill jobs account for 49 percent of CT's labor market, but only 39 percent of workers in CT possess the required skills" (National Skills Coalition). A 10 percentage point increase in the number of citizens with certificates or associates degree would result in:

- 11,600 fewer unemployed individuals
- 25,200 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## Delaware Playbook



### RELEVANT PATHWAYS

Delaware implements the Career Clusters framework in framing the development of its programs of study. These programs of study facilitate the delivery of academic and CTE delivery “through an aligned sequence of courses that build on each other through secondary and postsecondary instruction.” Local schools can adopt a state-approved program of study or develop their own. Delaware maintains an Automotive & Light/Medium Truck Diesel Technician pathway.

### RECENT FUNDING

Delaware received an estimated \$4,718,450 in Perkins Basic State Grant funds in FY 2015 and an estimated \$4,725,040 in FY 2016

### KEY STATE DOCUMENTS

- *Delaware Department of Education Career & Technical Education: CTE Programs of Study Policies and Procedures*
- *Career Clusters Framework Delaware CTE Programs of Study- Courses Crosswalk*
- *CTE Local Program of Study Application Template*

## State Basics

At the secondary level, CTE is delivered through comprehensive high schools, comprehensive charter schools, and technical high schools; at the postsecondary level, community colleges, Delaware Tech, and public universities offer CTE. Dual enrollment opportunities exist for secondary students, and according to ACTE, “DDOE CTE staff members are working to implement statewide articulation agreements based on curriculum aligned to state standards and common course outlines.” Multiple efforts are made at academic and CTE integration, including Crosswalks, integrated curriculum, and professional development services aimed at incorporating traditional academics in CTE curricula. CTE instructors also have access to professional learning communities, by which they collaborate with other instructors to create integrated and aligned course outlines.

According to a 2014 Advance CTE report on employer engagement in CTE, members of businesses and industry in Delaware can assist in the the development of “state-required CTE standards.” However, they do not participate in the state’s selection process of preferred credentials. Despite this, Delaware strives to maintain economically competitive and viable CTE programs and relies on the input of businesses and industry members in the development of CTE offerings.

## Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Participation in Program Advisory Committee
- Engagement with Program Advisory Committee and Local Education Agency (LEA)
- Work-Based Learning Opportunities
- Career Coaching/Mentorship

## Program Advisory Committees

Per Provision 2.8 of Title 14 (Education), Section 500 (Curriculum and Instruction) of the Delaware Administrative Code, LEAs shall “establish and maintain an active CTE advisory committee which includes labor and management personnel to assist in the development and operation of the program.” Advisory committees may participate in the adoption of a current state-model program of study or in the development of a local program of study (where a state-model program does not exist). They are responsible for reviewing existing programs of study for effectiveness and relevance to current industry needs and may recommend the discontinuation of a program or the transition to a state-model program of study. When a LEA seeks to create a local program of study, it must form a program advisory committee; this represents an excellent ground-floor opportunity for members of business and industry to affect CTE deliver.



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# Delaware Playbook



## Outside Engagement with Program Development

If unable to participate on a program advisory committee directly, there are still ample opportunities to affect CTE development and delivery. When a LEA and advisory committee decide to transition from an approved program of study to a state-model program of study, they must first determine the need for the transition. This presents an opportunity to lobby for or against the transition (with justification, of course). Furthermore, communication channels that exist among members of the program advisory committee and other members of industry/business present an opportunity to share relevant information and best practices. LEAs and program advisory committees are also required to facilitate discussion and build support among the local community and relevant stakeholders during the transition. These same opportunities exist when an LEA and a recently-developed program advisory committee create a new local program of study; indeed, since these programs are not constrained by a pre-established curriculum, they represent an opportunity for even greater involvement and input.

## Work-Based Learning

Delaware is currently redesigning its work-based learning (WBL) framework. However, opportunities for WBL include:

- Experiential education
- Job shadowing
- Cooperative education/Internships
- Industry-mentored projects

Business and industry partners should consult education officials about WBL opportunities. Furthermore, employers should consult Delaware child labor laws (Title 19, Chapters 501-510) as well as US Department of Labor Child Labor Bulletin 101.

## Career Coaching/Mentorship

Creating interest in skilled occupations represents a major hurdle to closing the skills gap. Career coaching and mentorships present an opportunity for members of business and industry in Delaware to nurture interest in CTE. Delaware requires each CTE student to develop a Student Success Plan to provide structure for the achievement of their education and career goals: "The student success plan represents a fluid, yet sequential plan that is benchmarked to the interests and needs of a students [and] connects the student with the larger community." Career coaches and mentors participate in the advisement process in order to facilitate continued development and to ensure that students' needs are being met as they strive to achieve their goals. Employers should contact their local school divisions to explore career coaching and mentorship options. These options provide an opportunity to make a direct impact on students who may be considering technical careers relevant to members of business and industry.

## Additional Resources

- Advance CTE State Profile:
  - <https://www.careertech.org/Delaware>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Delaware Title 14 (Education), Chapter 500 (Curriculum and Instruction)
  - <http://regulations.delaware.gov/AdminCode/title14/500/525.shtml>
- Delaware Title 19 (Labor), Chapter 500 (Child Labor)
  - <http://delcode.delaware.gov/title19/c005/>
- US Department of Labor, Child Labor Bulletin 101
  - <https://www.dol.gov/whd/regs/compliance/childlabor101.htm>
- Delaware Department of Education Career & Technical Education: CTE Programs of Study Policies and Procedures
  - [http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/384/DE\\_CTE\\_PO\\_S\\_PolicyandProcedures\\_August2016.pdf](http://www.doe.k12.de.us/cms/lib09/DE01922744/Centricity/Domain/384/DE_CTE_PO_S_PolicyandProcedures_August2016.pdf)



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### ECONOMIC IMPACT

Per Advance CTE, "middle-skill jobs account for 51 percent of Delaware's labor market, but only 44 percent of workers in Delaware possess the required skills" (National Skills Coalition). A 10 percentage point increase in the number of citizens with certificates or associates degree would result in:

- 2,700 fewer unemployed individuals
- 5,800 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org))

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## Florida Playbook



### RELEVANT PATHWAYS

Florida has adopted the the Career Clusters framework and has added an Energy cluster. At the secondary level, Florida maintains a Medium and Heavy Duty Truck and Bus Technician program, as well as an Aviation Maintenance General program. Students can achieve ASE certifications through their studies.

### RECENT FUNDING

Florida received an estimated \$62,270,060 in Perkins Basic State Grant funds in FY 2015 and an estimated \$63,202,141 in FY2016.

### KEY STATE LEGISLATION

An important piece of CTE legislation in Florida is the Career and Professional Education Act (CAPE); it seeks to “provide a statewide planning partnership between business and education communities.” The A++ Plan for Education, signed into law by Governor Jeb Bush in 2006, is another key piece of legislation.

## State Basics

CTE in Florida is delivered at the secondary level through comprehensive high schools, career academies located within comprehensive high schools, district technical centers, and University Developmental Research Schools. At the postsecondary level, CTE is delivered via area vocational-technical centers (mentioned above) and postsecondary technical centers as well as through public state and private universities and colleges. Florida actively seeks integration between CTE curricula and traditional academic coursework. Florida maintains multiple statewide CTE articulation agreements in addition to the over 6,000 articulation agreements that exist between school districts and Florida state colleges/local community colleges. Florida is committed to offering professional development for instructors through the Perkins Professional Development Institute and the Career and Technical Education Reading program. The Florida Association for Career and Technical Education also teams with the Department of Education to offer online courses and live events. Florida also seeks employer engagement in the development of state-required CTE standards and selection of industry credentials offered through coursework.

## Access Points

The following are opportunities for employers to become involved. The recommendations are found in Florida's CAPE Plan. Each access point is further explored throughout the rest of this document:

- CSF Workforce Investment Board
- Participation in annual adoption of State Board of Education industry credentials
- Participation in three-year CTE program framework review cycle
- Ad hoc committees
- Local advisory committees
- Work-based learning and apprenticeship program sponsor

## CSF Workforce Investment Board

According to the CAPE Plan, business and industry members can engage at the state level by participating on the CSF Workforce Investment Board. The CSF Board “provides oversight and design strategies to address critical statewide workforce needs.” Business and industry members may also seek access to regional workforce boards in the development of local strategic plans.



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## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 55 percent of Florida’s labor market, but only 46 percent of workers in Florida possess the required skills” (National Skills Coalition).

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 50,900 fewer unemployed individuals
- 135,500 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Florida Playbook



## Industry Credentials

According to a report by Advance CTE entitled *The State of Employer Engagement in CTE*, “business and industry members play an active role in the state’s selection process for preferred credentials for use in CTE programs.” This process affords business and industry members the opportunity to influence the preparedness of students upon completion of a CTE program. Florida maintains an extensive list of funded industry certifications at the secondary and postsecondary levels.

## Program Framework Review Cycle

Florida incorporates members of business and industry into the three-year CTE program framework review cycle: “Key business stakeholders representing occupations in the 17 career clusters review the instructional standards and benchmarks to determine relevancy in the workplace.” This practice, coupled with the annual adoption of industry credentials, allows future employers to contribute to the updating of CTE programs to ensure that they are remaining ahead of the technological curve. It also permits members of business and industry to suggest best practices as they develop.

## Ad Hoc Committees

Members of business and industry can participate in ad hoc committees, which allow them to maintain contact with key state CTE representatives and to remain engaged with the development of CTE. “These committees, comprised of subject matter experts, are called upon as needed to review frameworks or workforce-related technical assistance papers.”

## Local Advisory Committees

Florida technical centers maintain local advisory committees in addition to program specific advisory committees. They represent an opportunity for engagement for members of business and industry that are unable to access state-level policy-making bodies. According to the CAPE Plan, these committees “guide policy and workforce program alignment at the local level.”

## Work-Based Learning and Apprenticeship Program

Like many states, Florida DOE encourages work-based learning experiences. Furthermore, Florida operates an apprenticeship framework. Through apprenticeship programs, “employers [are able] to develop and apply industry standards to training programs for registered apprentices that can increase productivity and improve the quality of the workforce.” Apprentices become an industry-accepted journey worker upon completion of the program. Currently, two registered Diesel Mechanic apprenticeship programs exist: Bay Area Diesel Technicians GNJ and Kelly Tractor Company INJ.

## Additional Resources

- Advance CTE State Profile
  - <https://www.careertech.org/Florida>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Career & Adult Education Directory
  - <http://www.fldoe.org/academics/career-adult-edu/division-directory.stml>
- FL Apprenticeship Program
  - <http://www.fldoe.org/academics/career-adult-edu/apprenticeship-programs>
- FL DOE Legislation
  - <http://www.fldoe.org/academics/career-adult-edu/legislation/>
- Florida State Snapshot
  - [https://careertech.org/sites/default/files/pictures/Florida\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Florida_CTESnapshot2015.pdf)



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# Career and Technical Education

## RELEVANT COURSES

Georgia offers an Agriculture Mechanics Systems Student Plan of Study within its Agriculture, Food, and Natural Resources Career Cluster. According to the Student Plan of Study, skills relevant to this pathway include the ability to maintain and repair farm machines such as large tractors and combines

## RECENT FUNDING

Georgia received an estimated \$38,470,077 in Perkins Basic State Grant funds in FY 2015 and an estimated \$38,672,399 in FY 2016.

## KEY STATE DOCUMENTS

- Carl D. Perkins Career and Technical Education Act of 2006: Five Year State Plan for Georgia
- *LEA Consolidated Application* (Perkins IV Local Plan)
- Georgia maintains an archive of documents for use in preparing the Local Plan for the Improvement of CTEA; these documents are critical in acquiring program funding (<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Local-Plan-Application-and-Online-Forms.aspx>)

## Georgia Playbook



## State Basics

CTE (known as Career, Technical and Agricultural Education, or CTAE in Georgia) is delivered at the secondary level through comprehensive high schools and career academies; at the postsecondary level, the Technical College System of Georgia provides CTE opportunities. The state integrates Georgia Performance Standards into CTAE standards to ensure that secondary level curriculum reinforce the traditional academic skills. The state also offers dual enrollment opportunities for CTE courses through its HOPE Grant Programs and Move On When Ready, as well as traditional academic dual enrollment opportunities through programs such as the ACCEL Program. Georgia has adopted the Career Clusters framework and has added an additional Energy cluster. Furthermore, Georgia maintains Pathways Plans of Study that provide an academic guide for students interested in a specific career. In order to ensure that pathway courses are effectively taught, CTE instructors have access to multiple sources of professional development. Georgia's "CTE professional learning plan includes curriculum (pathway) and assessment training; industry update training; career and technical student organizations training; professional association training; and industry certification training."

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- State Economic Development Meetings
- CTAE Industry Certification Plan
- WBL, Internships, Apprenticeships
- Advocate for reauthorization of Carl D. Perkins Career and Technical Education Act of 2006

## State Economic Development Meetings

Throughout the fall seasons of 2015 and 2016, the Georgia Department of Education hosted regional State Economic Development Meetings that provided an opportunity for members of business and industry to discuss regional workforce needs with officials from the Department of Education and the Career, Technical, and Agricultural Education Division. Assuming that the state continues to offer regional economic development meetings in the coming years, these opportunities allow business and industry representatives to advocate for/contribute to the development of rigorous CTEA programs in their regions and identify economic trends within their sectors. Georgia DOE also produces a newsletter updating the public on workforce development needs and issues throughout the state. These newsletters often include information regarding pending legislation and opportunities for employers to participate in the delivery of CTEA.



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## ECONOMIC IMPACT

Per Advance CTE, "middle-skill jobs account for 55 percent of Georgia's labor market, but only 44 percent of workers in Georgia possess the required skills" (National Skills Coalition).

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 23,700 fewer unemployed individuals
- 80,400 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Georgia Playbook



## CTAE Industry Certification Initiative

According to the Department of Education, "the State Department of Education is committed to the industry certification process as a part of its effort to strengthen technical and academic standards for all Career, Technical and Agricultural Education (CTAE) programs."

Georgia stresses business and industry member participation in all program components, including the requirement that a program becomes industry certified only after it has passed rigorous reviews by leaders of business and industry.

Schools maintain discretion regarding their pursuit of the industry certification process; however, they may receive grant funding if support from the Georgia Legislature exists. A program typically earns certification for a period of five years if it passes relevant standards. These standards are created by GA DOE Program specialists and state-level business associations. Therefore, participation in state-level associations can be a critical component of gaining access to the CTAE Industry Certification Initiative.

## Perkins Act Reauthorization

The key federal legislation, the *Carl D. Perkins Career and Technical Education Act of 2006*, has been up for reauthorization since 2013. The Perkins Act provides key funding to state CTE programs. A bill reauthorizing the Perkins Act, the *Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act*, was introduced and passed in the House of Representatives during the 114<sup>th</sup> Congress, yet has not been passed by the Senate. Members of business and industry should express their support for H.R. 5587 to their elected federal representatives.

## Work-Based Learning

Members of business and industry can partner with school districts to provide work-based learning opportunities for students completing a defined Career Pathway. The state offers multiple categories of work-based learning, including Employability Skill Development, Cooperative Education, Internship, Youth Apprenticeship, and Clinical Experiences. Work-based learning experiences present a great opportunity for members of business and industry to contribute to the development of best practices in CTAE. Through WBL coordinators, members of business and industry maintain a direct link to information regarding CTAE curriculum, certifications, and delivery. Through these connections, they can share ideas regarding CTAE best practices. Furthermore, Georgia DOE maintains a standard that active advisory committees assist with the design, development, implementation, administration, and evaluation of the program. These committees include work-based learning personnel and represent a direct channel to impact CTAE delivery.

## Additional Resources

- Advance CTE State Profile
  - <https://www.careertech.org/Georgia>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- CTAE Industry Certification Initiative Information
  - <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Industry-Certification-Standards.aspx>
- Work-Based Learning Manual
  - <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Work-Based-Learning.aspx>
- CTAE Local Plan Application Documents
  - <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Local-Plan-Application-and-Online-Forms.aspx>



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# Career and Technical Education

## Hawaii Playbook



### RELEVANT PATHWAYS

Hawaii offers numerous mechanic-related career pathways, including Aircraft Mechanic, Machinist Mechanic, Fabricator Mechanic, and Heavy Equipment Mechanic.

### RECENT FUNDING

In FY2015, Hawaii received \$5,488,705 in Perkins Basic State Grant Funding. In FY2016 the state received \$5,496,906.

### KEY STATE LEGISLATION

SB374 (2015) expands eligibility for dual credit to all public, private, and home-school students in grades 9-12.

Hawaii is also working on a comprehensive redesign of its high schools that will heavily involve CTE, including career academies, emphasis on applied learning, integrated curriculum, personalized student transition plans, and more varied performance assessments.

## State Basics

Hawaii delivers secondary CTE through comprehensive high schools and postsecondary CTE through the state's seven community colleges. Additionally, Hawaii offers CTE programs at four state correctional institutions for offenders nearing release. Hawaii has developed a statewide Dual Credit Articulated Programs of Study framework that allows secondary students to take classes through their high schools that provide college credit contingent on mastering student learning outcomes common to the secondary and postsecondary levels. Qualified juniors and seniors can also earn dual-enrollment credit through the University of Hawaii system with the Running Start program. Hawaii has a skills gap, with middle-skill jobs accounting for 49% of the state's labor market but only 47% of workers possessing the required skills. By 2018, Hawaii will have 708,400 jobs, 58% of which will require postsecondary education or training and 66,000 of which will require a certificate.

## Access Points

- Work-Based Learning: Hawaii Department of Education
- Workforce Development Committee: Hawaii Department of Labor, Workforce Development Division
- Curriculum Development Committee: 2015 Perkins Basic Grant Annual Plan

## Work-Based Learning

Work-Based Learning is an essential part of CTE education in Hawaii, and includes both traditional work-based learning, developed by high schools in partnership with local businesses and organizations, and a "Performance-Based Assessment" that includes responding to a "challenge" presented by a local or national business and formulating a plan to solve a problem facing the the organization. The state encourages work-Based learning by covering all workmen's compensation claims for students, and secondary and postsecondary schools both sponsor existing programs and offer the opportunity for developing new ones. The state Department of Education website offers links to forms pertaining to establishing work-based learning opportunities.



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## ECONOMIC IMPACT

If Hawaii increased the share of its population holding an associate's degree or professional certification by 10 percentage points, the state would have:

- A \$947 increase in median per capita income
- 2,500 fewer unemployed individuals
- 5,600 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Hawaii Playbook



## Curriculum Development

Hawaii solicits input from business and industry into developing CTE standards and certifications through three pathways. Pathway Advisory Councils (PACs) consist of local businesses, including small businesses, labor organizations, and secondary and postsecondary CTE faculty to develop and approve standards for Hawaii's three-tiered CTE system, which begins with a broad Core study area before branching into narrower Cluster and Concentration areas. There are six of the councils, one for each career cluster grouping in Hawaii. At a more local level, School Community Councils (SCCs) provide guidance on the planning, implementation, and evaluation of specific CTE programs. SCCs include the same stakeholders as the PACs but also include parents, administrators, and counselors. Finally, each secondary school has a local CTE advisory committee and/or a CTE student organization advisory committee made up business and industry specialists who provide advice regarding program and curriculum improvement and expansion.

## Workforce Development

Hawaii offers numerous resources through its Department of Labor website to connect employers and job seekers. HireNet Hawaii contains information about job openings across the state. Hawaii ETP list hosts an index of job training courses that can be funded by the federal Workforce Investment Act program. The Hawaii Workforce Infonet contains information about industry and employments statistics and trends, as well as other economic data. Finally, the Hawaii One-Stop Center System lists locations across the state where job-seekers can obtain a variety of services, including job search assistance, personal career planning, training opportunities, help navigating the HireNet Hawaii site, and library resources.

## Additional Resources

- Work-based learning at the Hawaii Public schools website:
- <http://www.hawaiipublicschools.org/TeachingAndLearning/StudentLearning/CareerAndTechnicalEducation/Pages/home.aspx>
- Example of work-based learning options at Campbell High School in 'Ewa Beach
- [http://www.campbellhigh.org/apps/pages/index.jsp?uREC\\_ID=66051&type=d&pREC\\_ID=106277](http://www.campbellhigh.org/apps/pages/index.jsp?uREC_ID=66051&type=d&pREC_ID=106277)
- Hawaii One-Stop Centers:
- <http://labor.hawaii.gov/wdd/onestop/>
- Hawaii ETP List:
- <http://dlir.state.hi.us/labor/etp/>
- HireNet Hawaii:
- <https://www.hirenethawaii.com/vosnet/Default.aspx>
- Hawaii Workforce Infonet:
- <https://www.hiwi.org/vosnet/Default.aspx>
- Description of CTE curriculum development process
- [https://www.hawaii.edu/offices/bor/sbcte/materials/201505210900/Item\\_3\\_Review\\_of\\_DOE\\_UHCC\\_and\\_DPS\\_2015\\_Perkins\\_Basic\\_Grant\\_Annual\\_Plan.pdf](https://www.hawaii.edu/offices/bor/sbcte/materials/201505210900/Item_3_Review_of_DOE_UHCC_and_DPS_2015_Perkins_Basic_Grant_Annual_Plan.pdf)



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# Career and Technical Education

## RELEVANT PATHWAYS

Industrial Technology Cluster: Applied Science, Technology, Engineering, and Manufacturing programs include Heavy Equipment Standards developed by AED

## RECENT FUNDING

- \$11,963,946 Perkins
- State funding reimburses up to half of CTE program costs
- Annual appropriation for community colleges
- Workforce Training and Economic Development Fund

## KEY STATE LEGISLATION

- IA Administrative Code §261-9.1: Established Workforce Training and Economic Development Fund
- HF454: Supplementary weighting program for CTE-intensive classes
- HF2460: Creates and funds apprenticeship training program
- SF2347: Appropriates funds for postsecondary CTE-related initiatives
- HF2392: CTE program quality standards

## Iowa Playbook



## State Basics

In Iowa, secondary CTE courses are delivered through comprehensive high schools, some of which partner with local community colleges. CTE is delivered at the postsecondary level through area community colleges that each serve a multi-county area containing between 4 and 12 counties. Programs are also offered through the Iowa School of the Deaf and in state correctional facilities. State law requires articulation for CTE programs. The state Senior Year Plus (SYP) program provides high school students with access to courses that have the potential to generate college credit including AP and concurrent enrollment programs. Governor Terry Branstad recently signed new legislation revamping CTE curriculum and encouraging industry stakeholder involvement. Now is an excellent time for AED-affiliates to join the state in developing appropriate programming.

## Access Points

The following are opportunities for employers to become involved:

- Work-Based Learning, Internships, Apprenticeships
- Iowa Career Coach
- Future Ready Iowa Initiative to engage employers and industry experts in CTE program design
- Iowa Governor's STEM Advisory Council

## Iowa's Career Coach

The Governor's Future Ready Iowa Initiative set up an online Career Coach program. The website allows Iowans to explore career options within the state including the local demand, salary, and education requirements of specific occupations. The Career Coach also provides career assessment tools, a resume builder, and a database of available career training programs. AED-affiliates should ensure that their technician needs are represented in the Career Coach program and that the stated information is accurate.



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## ECONOMIC IMPACT

By 2018, 55% of all Iowa jobs will require some training beyond high school, including 183,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$858 higher median per capita income
- 5,500 fewer unemployed
- 15,000 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACT

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# Iowa Playbook



## Heavy Equipment Standards

Iowa serves as an excellent example of AED partnering with state officials to develop career training that meets the needs of AED-affiliated companies. The Standards for Construction Equipment Technology were developed in 2008 and still provide the skills standards for post-secondary schools in preparing students for careers as equipment technicians. This extensive 86-page plan could be used as a template in other states.

## Best Practices List

### Flexible and Responsive to Workforce Needs

- The CTE program development required by HF2392 is currently being formulated. The potential framework will use regional planning partnerships to align secondary CTE programs with local employer needs.

### CTE Integration with Traditional Academic Programs

- Iowa career academy programs combine at least 2 years of secondary education with an associate degree in a career preparatory program.

## 2016 CTE Legislative Reform

In May 2016, Governor Terry Branstad signed into law new legislation that raises the bar for quality CTE programs and creates a new vision for all high school students to graduate ready for college or career training and jobs. HF2392 builds on recommendations provided by the Secondary Career and Technical Education Task Force. The CTE reform initiative is in line with the Future Ready Iowa Initiative launched by Governor Branstad and Lieutenant Governor Kim Reynolds in 2015. HF2392 works to achieve the governor's goal that 70% of Iowans have education and training beyond high school by 2025 by setting the following standards:

- Align the needs of students, employers and the state's economy
- Engrain career guidance into a student's educational experience so he or she can make informed decisions about future postsecondary and career plans
- Introduce exploratory coursework earlier to better prepare students for transitory and ultimately higher-level, specialized academic and technical training
- Expand student access to coordinated work-based learning opportunities
- Improve access to high-quality CTE programs for students across Iowa as regional partnerships create an expanded statewide system of regional centers.

## Additional Resources

- State Snapshot: [https://careertech.org/sites/default/files/pictures/iowa\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/iowa_CTESnapshot2015.pdf)
- Heavy Equipment Standards: <https://www.educateiowa.gov/documents/service-areas-industrial-technology/2013/10/heavy-equipment-standards>
- Future Ready Iowa Career Coach: <https://iowa.emsicareercoach.com/>



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# Career and Technical Education

## Idaho Playbook



### State Basics

At the secondary level, Idaho offers PTE (Professional Technical Education) through comprehensive high schools, specialized professional-technical schools that provide more advanced CTE education, and cooperative programs with technical colleges. At the postsecondary level, Idaho offers CTE through its six technical colleges, which also offer apprenticeships and adult skill upgrading and retraining. The Idaho School for the Deaf and Blind and the Robert Janss School (part of the Department of Corrections) also offer CTE programs. Idaho uses Advanced Learning Partnerships to coordinate articulation agreements and improve secondary-postsecondary alignment. These partnerships include business, industry, and secondary and postsecondary education leaders. Idaho offers an 8-in-6 program allowing students to complete grades 7-12 and an associate's degree or trade certificate in six years and the Dual Credit for Early Completers program allowing students to earn up to 36 hours of dual-credit courses their senior year of high school. Idaho has a skills gap, as 54% of jobs in the state are middle-skill jobs, but only 51% of workers possess the required skills. By 2018, Idaho will have 822,900 jobs, 58% of which will require more than a high school education and 86,000 of which will require a certificate.

### Access Points

- Work-Based Learning: Idaho Department of Career & Technical Education
- Workforce Development: Idaho Workforce Development Council
- Curriculum Development: Idaho Skill Stack

### Work-Based Learning

Idaho recently debuted a work-based learning partnership with CAT and the College of Western Idaho where students can earn an associate's degree in diesel engine technology in 15 months through an eight hour combined school/work day and begin earning wages while still in school. At the secondary level, Idaho offers work-based learning through high schools and independently through Individualized Occupational Training (IOT) run by the Idaho Department of CTE. To participate in IOT, a student must take a semester long career exploration course in preparation, after which they are paired with an approved work-based learning opportunity matching their skill level as well as an on-site mentor.

#### RELEVANT PATHWAYS

Idaho offers multiple diesel mechanic programs, including heavy equipment/diesel engine technician and agricultural diesel career paths.

#### RECENT FUNDING

In FY2015, Idaho received \$6,380,330 in Perkins Basic State Grant funding. In FY2016, the state received \$6,441,799.

#### KEY STATE LEGISLATION

SB1275 (2014) directs the Board of Professional-Technical Education to implement quality standards for agricultural and natural resource education programs and establish related grant programs.

The Idaho Department of Education has created the Rural Education Initiative and the Dual Credit Task Force to develop a unified framework for dual and concurrent enrollment at all schools across the state.



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## ECONOMIC IMPACT

If Idaho increased the share of its population with an associate's degree or professional certificate by 10 percentage points, the state would have:

-A \$551 increase in median per capita income

-3,200 fewer unemployed individuals

-8,100 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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### The Idaho Career & Technical Education Foundation (ICTEF)

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# Idaho Playbook



## Curriculum Development

Idaho determines and updates program standards for CTE courses with substantial input from industry. All CTE programs must undergo "criticality surveys" in which businesses in Idaho are surveyed about the importance of particular skills and proficiencies for a given occupation. The responses to these surveys are used to determine the skill sets and subjects emphasized in state CTE courses.

### BEST PRACTICES

#### Secondary/Postsecondary Alignment

Idaho recently debuted a system called Skill Stack, in which students earn "badges" or "micro-certifications" upon the demonstration of proficiency in a career-relevant skill. The criteria for awarding badges are developed through collaboration with CTE faculty, business, industry, and other stakeholders, and only certified instructors may validate students' completion of a badge or micro-certification. The Idaho Skill Stack website also includes a searchable database to help employers find employees with particular skills and proficiencies.

#### Employer Involvement

Employers are involved in Idaho's Advanced Learning Partnerships, where businesses and educators collaborate to develop better linkages between secondary and postsecondary institutions.

## Workforce Development

Idaho offers resources for both job-seekers and businesses under the auspices of the Workforce Investment and Opportunity Act (WIOA) and the Workforce Development Training Fund (WDTF). The WDTF reimburses businesses that bring jobs to Idaho through expansion or retraining existing workers for the costs of training employees. The WIOA also offers job training reimbursement for businesses that train entry level workers or retrain workers after layoffs (up to 50% of the employee's wages). Additionally, the WIOA provides training for workers directly, and can help businesses develop customized training plans for retraining workers. Idaho also provides career exploration services, links to apprenticeships, and job search services for workers, as well as recruitment services for firms. Finally, the Idaho Workforce Development Council provides information on wages, economic trends and statistics, employment projections, and hiring incentives and tax credits for businesses.

## Additional Resources

- Idaho CTE website describing Individualized Occupational Training  
<https://cte.idaho.gov/students/fields/individualized-occupational-training/>
- Idaho Labor Market Information website  
<http://lmi.idaho.gov>
- Idaho Department of Labor main website  
<https://labor.idaho.gov/dnn/Default.aspx?alias=labor.idaho.gov/dnn/idl>
- Example of a criticality survey for diesel technology  
[https://cte.idaho.gov/wp-content/uploads/2016/01/Diesel\\_Tech\\_Criticality\\_Survey\\_Results.pdf](https://cte.idaho.gov/wp-content/uploads/2016/01/Diesel_Tech_Criticality_Survey_Results.pdf)
- Idaho Skill Stack website:  
<https://skillstack.idaho.gov>



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# Career and Technical Education

## Illinois Playbook



### RELEVANT PATHWAYS

Illinois has adopted the Career Clusters framework and mapped the original 16 clusters to its five career fields. It has relevant pathways in agricultural power systems, natural resources systems, construction, fabrication, and diesel technicians.

### RECENT FUNDING

Illinois received an estimated \$40,276,006 in Perkins Basic State Grant funds in FY2015 and an estimated \$40,004,782 in FY2016

### KEY STATE DOCUMENTS

- The Work Based Learning Report, was a work effort led by the P-20 Council's College & Career Readiness Committee to evaluate the impact of work based curriculum.
- SB587 (2014) This bill expanded initial access to a CTE educator endorsement by modifying the standard of requiring applicants pass a basic skills test. Now, educators must pass the basic skills test to *renew* the CTE endorsement.
- HB4910 (2014) calls for support of advanced manufacturing education curriculum at community colleges.

## State Basics

In Illinois CTE has three possible routes of administration at the secondary level: comprehensive high schools, CTE-focused high schools, and area career centers. At the postsecondary CTE reaches students through the state's community colleges. As a result of a 2010 initiative, the process of earning dual enrollment credit, as well as articulating credit for CTE coursework has become a standardized process statewide. Professional development is offered through the Illinois Center for Specialized Professional Support which provides development tools, and technical assistance to CTE educators and administrators. The center also runs the Professional Development Network and the Perkins Administrator Cohort to help disseminate information among educators and administrators to improve understanding of programs and increase utilization of existing resources. The Illinois CTE Curriculum Revitalization Project have been leading efforts in analyzing the flaws of previous CTE programming and overhauling curriculum to produce practical and beneficial results. IACTE also provides traditional professional development resources at its annual summer conference.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Technical Assistance for Rigorous Academic and Career Technical Education Project
- Illinois workNet and Work Based Learning
- The P-20 Council

## Technical Assistance for Rigorous Academic and Career Technical Education Project

This project focuses on helping the State Board of Education in initiating pilot programs in High Schools That Work, the Southern Regional Education Board program that emphasizes education that prepares students for higher education or entry into the workforce. Project staff work with local educators and administrators to help develop comprehensive curriculum. During the 2016 year, the project had to cease operations until FY2017 due to a lack of funding. This funding caused shutdown provides associations lobbying the Illinois State Legislature for increased funding for curriculum and CTE redevelopment with a strong example of the need for additional funding.



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# Illinois Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 59 percent of Illinois’s labor market, but only 48 percent of workers in Illinois possess the required skills.” A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 26,200 fewer unemployed individuals
- 65,200 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## Illinois workNet and Work Based Learning

Established by the Governor’s Illinois Workforce Innovation Board (IWIB) Illinois workNet serves as the main portal system for state workforce initiatives, primarily career recruitment and placement services. Over time, workNet has expanded and now helps individuals, employers, educators to successfully achieve their goals. workNet also facilitates training opportunities for individuals seeking employment and for employers requiring skilled employees. Other statewide workforce initiatives are also hosted on workNet such as the EPIC Program and Disability Employment Initiative.

Illinois also has been in the process of developing and integrating work based learning into their curriculum, after an initial assessment by the working group of the P-20 committee. The program continues to be developed with Department reports indicating a greater understanding of the value of work based learning opportunities. Given the emphasis of developing work based learning by the Department of Commerce, focus should be on coordinating development between Commerce and the State Board of Education potentially by the P-20 Council or private efforts.

## Apprenticeship

Facilitated by the Illinois Department of Employment Security (IDES), the Apprenticeship Information Center Program (AIC) assists matching highly motivated applicants with employers via a Learn as you Earn structure. Apprentices receive a combination of instructional education as well as on the job (OJT) training while being paid on a progressive wage scale.

## Illinois P-20 Council

This Council was established by act of the Illinois State Legislature in 2009 and is responsible to develop a framework to improve the alignment of state curriculum from preschool all the way to the postgraduate level. The Council members also make up several committees, namely the College & Career Readiness Committee which oversees CTE curriculum. In 2013 the committee conducted a study of the work based learning component of state curriculum, in which it recommended further development of the program by utilizing public-private connections to facilitate additional work opportunities. The Council’s focus on all levels of education makes it a particularly useful mechanism to institute CTE reform.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Illinois>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- State CTE Guidelines
  - <http://opi.mt.gov/pdf/CTE/combinedguidelines.pdf>
- Work Based Learning Report
  - <https://www.illinoisworknet.com/wbl/Documents/WBL%20POS%20Report%20Final%20Illinois%20Pathways.pdf>
- House Bill 4910 (2014) Information
  - <http://ilga.gov/legislation/98/HB/PDF/09800HB4910lv.pdf>
- Technical Assistance for Rigorous Academic and Career Technical Education Project
  - <http://connectionsproject.illinoisstate.edu>
- Illinois workNET
  - <https://www.illinoisworknet.com/>
- IDES Apprenticeship Information Center Program
  - <http://www.ides.illinois.gov/Pages/Apprenticeship.aspx>
- P-20 Council
  - <https://www.illinois.gov/gov/P20>



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# Career and Technical Education

## Indiana Playbook



### RELEVANT PATHWAYS

A heavy equipment concentration is currently being developed within the Architecture and Construction Cluster and will be implemented in 2019 (year 3 of the state plan).

### RECENT FUNDING

- \$24,878,242 Perkins
- State funding per-credit-hour
- CTE course funds range from \$150-\$450 based on labor market demand and wages

### KEY STATE LEGISLATION

- SB465: Created Indiana Works Council
  - HE1005: Failing students must take career readiness exam
  - SB406: Established state-wide core transfer library for dual enrollment courses
  - HB1314: Regulations for proprietary institutions
- Note: Articulation agreements are negotiated at the local level.

CTE in Indiana is delivered at the secondary level through comprehensive high schools and career centers. Programs are also available at the postsecondary level through the statewide community college system. The state CTE curriculum is fully integrated with traditional academic programs. Dual enrollment programs are established through formal agreements and each high school must offer at least two dual enrollment courses. There is also a statewide National Career Readiness Certificate program. Program standards are set and revised by state-level committees including industry stakeholders. Regional Indiana Works Councils also influence curriculum standards. Indiana is currently implementing a plan to revise and update its CTE programs which will be completed by 2020. This provides an excellent opportunity for AED-affiliates to influence curriculum development

## Access Points

The following are opportunities for employers to become involved:

- 12th grade Work-Based Learning Capstone can be fulfilled by: apprenticeship, cooperative, internship, school based enterprise, or service-based learning
- Statewide Indiana Career Council
- Regional Indiana Works Councils
- Local Advisory Committees

## Areas of Influence

Indiana allows for industry stakeholder input at three different levels: state, regional, and local committees. The most effective way for AED affiliated companies to effect the system is at the Regional Indiana Works Councils. These Councils identify the industry needs for specific areas of the state and provide guidance to local committees on meeting the regional market demand.



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## ECONOMIC IMPACT

By 2018, 56% of all Indiana jobs will require some training beyond high school, including 337,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$824 higher median per capita income
- 16,900 fewer unemployed
- 35,600 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

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# Indiana Playbook



## Locally Tailored

Articulation agreements are negotiated at the local level, allowing programs to be tailored to meet local market needs. Once a local committee identifies an area where there is high market demand or where current programs are lacking, the state curriculum committees will work to create an appropriate CTE program and provide the support needed to ensure implementation is successful.

## Best Practices List

### Flexible and Responsive to Workforce Needs

- This is one of Indiana's strongest points. Market demand is considered at all levels of program development and funding is aligned to areas with the greatest opportunities.

### Career Services System

- There is no state-wide system specifically tailored to high school or CTE students.

### Intermediaries for Work-Based Learning

- There is a solid work-based learning requirement for the senior capstone class, but no formal intermediary to arrange the experience. This set-up may vary based on the locality.

## State Funding Formula

Under Indiana IC 20-43-8, state funding is allocated to local CTE programs based on individual categorizations of each course. CTE courses are designated as foundational, introductory, work-based learn, or wage/demand. Each type of course receives a set amount of dollars per enrolled student. In the wage/demand category, courses where there is high market demand for high wages jobs receive greater funding. The remaining categories receive set funding amounts that do not change based on market demand or current wages. There are also one-time grants available to school corporations to develop additional programs.

Indiana funding wage/demand matrix:

State Funding Per Credit Hour	High Wage	Moderate Wage	Low Wage
<b>More than Moderate Labor Market Demand</b>	\$500	\$450	\$300
<b>Moderate Labor Market Demand</b>	\$450	\$300	\$225
<b>Less than Moderate Labor Market Need</b>	\$300	\$225	\$150

<http://www.doe.in.gov/sites/default/files/cte/2016-2017-cte-funding-memo-4-25-16.pdf>

## Additional Resources

- State Snapshot: [https://careertech.org/sites/default/files/pictures/Indiana\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Indiana_CTESnapshot2015.pdf)
- Indiana State CTE Programs: <http://www.doe.in.gov/cte>
- Work Based Learning Capstone Manual: <http://www.doe.in.gov/sites/default/files/standards/work-based-learning-manual-revisions-september-2015-oct-01-2015.pdf>
- Regional Indiana Works Councils: <http://www.in.gov/irwc/>



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# Career and Technical Education

## Kansas Playbook

### RELEVANT PATHWAYS

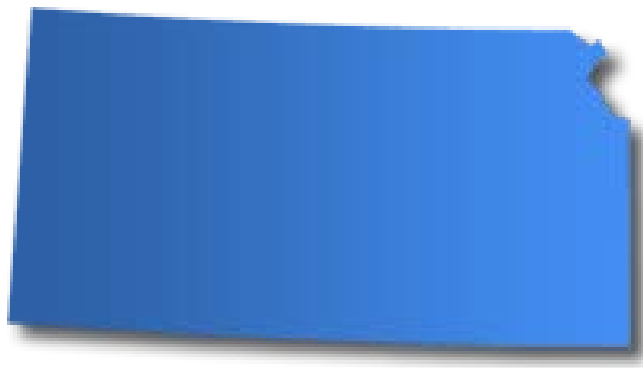
Kansas has adopted the Career Clusters framework, within 6 specific fields. It has relevant pathways in light and heavy machinery as well as in construction and agricultural machinery maintenance.

### RECENT FUNDING

Kansas received an estimated \$10,245,408 in Perkins Basic State Grant funds in FY2015 and FY2016

### KEY STATE DOCUMENTS

- Senate Bill 155 (2012) (SB155) was a key piece of legislature that establishes tuition support to CTE students, the Credential Incentive Program which allows students to earn professional credentials before graduating, and the Marketing CTE Program that expands visibility of CTE programs and increases participation.
- The Professional Learning Experience Toolkit lays out the process of implementing a work based learning aspect into CTE curriculum and the necessary state requirements.



## State Basics

In Kansas, CTE is delivered through comprehensive curriculum integrated into Secondary education. Postsecondary student can receive CTE through Kansas' Community and Technical Colleges as well as programming available at Washburn University. Recently established statewide articulation agreements allow students opportunities to credit courses taken in high school towards degrees at specific state schools. Thanks to funding appropriated by SB155 (2012) students seeking to enroll in CTE dual enrollment courses are able to do so at no cost to them. The Kansas State Department of Education emphasizes comprehensive professional development with extensive programs to integrate CTE and academic curriculum, develop STEM based academic courses with and emphasis in math, and establish relationships between secondary and postsecondary programs. Professional development is also facilitated by Kansas-ACCTE's annual conference. Kansas' specialized certificate program allows for industry experts with over 4,000 hours of experience to act as credentialed instructors in relevant CTE courses. SB155 also establishes the Certification incentive program which encourages and enables students to receive professional certifications prior to graduating.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Quality Professional Learning Experiences
- Local CTE Advisory Committees & KACCTE
- Credential Incentive Program
- K-ACCTE
- Technical Education Authority (TEA)

## Quality Professional Learning Experiences

In order to facilitate hands on experiences that cannot take place in a traditional classroom setting, Kansas has developed the Professional Learning Experiences Program to provide the practical professional experience needed in many CTE programs. Opportunities begin as early 9<sup>th</sup> grade to expose students to possible career paths. Later opportunities, such as Registered Apprenticeships allow for 11<sup>th</sup> and 12<sup>th</sup> grade students to work directly with a private business in a professional setting to help bridge the gap between secondary programs and career placement following graduation. Other opportunities include job shadowing, internships, and community-based projects and opportunities.



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# Kansas Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 56 percent of Kansas’ labor market, but only 46 percent of workers in Kansas possess the required skills.”

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 5,400 fewer unemployed individuals
- 17,300 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

### Rita A. Johnson

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## Local CTE Advisory Committees & KACCTE

In order to enable collaboration between industry businesses, the local community, and educators, local advisory committees may be established with approval of the Local Education Agency (LEA). These committees are established either for a specific career pathway(s) or the overlying CTE cluster, and are comprised of a mix of educators and relevant local business representatives. These committees enable businesses to give input into course content, assist with any credentialing for a given cluster or pathway, evaluate the facilities and equipment of CTE programs to ensure appropriate skills are being taught. Businesses can also utilize membership in a committee to help advance the visibility of local CTE career opportunities as well as recruit students for future employment. The Kansas Advisory Committee for Career and Technical Education (KACCTE) is a similarly structured committee with a focus on statewide CTE and direct coordination with the Kansas State Department of Education.

## Credential Incentive Program

This program, established by SB155 (2012) offers opportunities for graduating high school students to earn professional credentials in specific high-opportunity industries identified by the Kansas Department of Labor, at no cost to students. Each year, the associated credentials of the identified industries are selected and students in relevant programs are notified of the credential opportunity and related career possibilities.

## K-ACTE

Originally established in 1927, the K-ACTE is professional association made up of affiliate groups representing multiple industries across CTE clusters. Unified with the national ACTE, The K-ACTE organizes lobbying efforts to the Kansas legislature for CTE programing, and additionally offers professional development of CTE educators with its annual conference, co-hosted by the Kansas State Department of Education and Board of Regents.

## Technical Education Authority (TEA)

Established in 2007, the Technical Education Authority is comprised of 12 appointed members who make recommendations to the Kansas Board of Regents regarding coordination, statewide planning and improvements/enhancements to the postsecondary technical education system. This authority regularly meets every other month to continually evaluate the quality of current CTE postsecondary programs as well as develop new curricula as the needs of the state economy shift.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Kansas>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- SB155 Guide
  - [http://www.ksde.org/Portals/0/CSAS/CSA\\_S%20Home/CTE%20Home/Initiatives/SB\\_155/SB%20155%20Resource%20Document%202013-14.pdf](http://www.ksde.org/Portals/0/CSAS/CSA_S%20Home/CTE%20Home/Initiatives/SB_155/SB%20155%20Resource%20Document%202013-14.pdf)
- Professional Learning Experience Toolkit
  - [http://www.ksde.org/Portals/0/CSAS/CSA\\_S%20Home/CTE%20Home/Instructor\\_Resources/PLE%20Toolkit%20-%202015.pdf](http://www.ksde.org/Portals/0/CSAS/CSA_S%20Home/CTE%20Home/Instructor_Resources/PLE%20Toolkit%20-%202015.pdf)



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# Career and Technical Education

## Kentucky Playbook



### RELEVANT PATHWAYS

- Construction: Heavy Equipment Sciences
- Automobile & Aircraft Manufacturing
- Transportation/Distribution & Logistics

### RECENT FUNDING

- \$17,905,647 Perkins
- State funding comes in 3 streams:
- Funding for CTE programs
- Funding for KY Technical Schools
- Funding for KY Community & Technical College System

### KEY STATE LEGISLATION

- HB87: KY Center for Education & Workforce Statistics coordination with the Department of Education
- HB1: Legislative mandate for KY to reach national average educational attainment
- HB702: Unites the commonwealth's two CTE systems under the KY Department of Education

## Access Points

The following are opportunities for employers to become involved:

- Tech Ready Apprentices for Career in Kentucky (TRACK)
- Programs of Study Work Teams
- Work-Based Learning, Internships, Apprenticeships, Entrepreneurships, Mentoring, Shadowing, Service Learning
- State CTE Advisory Committee
- Council on Postsecondary Education STEM Task Force

## State Basics

Kentucky delivers CTE programs at the secondary level through comprehensive middle and high schools, state-operated area technology centers, and locally-operated career and technology centers. CTE is offered at the postsecondary level through the Kentucky Community and Technical College System. State CTE courses are aligned to national standards for the program area, the Kentucky Occupational Skill Standards, and the Kentucky Core Academic Standards. Programs and standards are also approved by state business and industry representatives. Kentucky requires that secondary schools offer Advanced Placement, dual credit, or dual enrollment courses. For dual credit courses, students are guaranteed at least a 50 percent tuition waiver. All articulation agreements for postsecondary technical programs are reviewed annually and adjusted as needed to meet state and local educational goals.

## Programs of Study

Kentucky is developing state Programs of Study through work teams composed of business and industry representatives, secondary teachers, community and technical college faculty, university faculty, and agency staff. Local school districts may either utilize the state guidelines or develop their own Programs of Study that the state approves. The state provides Programs of Study templates that can be accessed online. The Kentucky Office of Career and Technical Education is responsible for approving all new secondary and postsecondary CTE programs.



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## ECONOMIC IMPACT

By 2018, 56% of all Kentucky jobs will require some training beyond high school, including 218,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$1,110 higher median per capita income
- 13,200 fewer unemployed
- 39,200 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Kentucky Playbook



## Unite to Serve Program

Kentucky runs a statewide program called “Unite to Serve” that was designed by the state’s Career and Technical Student Organizations (CTSO) and was implemented in 2015. The programs unite all of the CTOS within a school district to serve their school and local community. Unite to Serve is composed of three categories: advocacy, career awareness, and literacy. CTOS that complete all three components will be recognized at a state leadership conference. The program focuses on having students serve as ambassadors within their local communities to promote technical jobs that are available for students in the school district. Unite to Serve provides an opportunity for local businesses to partner with students in promoting skills that can be used to fill local job openings.

## Best Practices List

### Career Services System

Kentucky does not have a state-wide career services system, but it does operate an extensive data exchange system. The Kentucky Tech System (KTS) provides a secure transfer of student enrollment data between high schools and technical centers. High schools can run real-time attendance reports to check on attendance at technical school programs. The state also provides extensive system training opportunities to ensure that administrators take full advantage of the easy data transfer and student evaluation systems.

## Work-Based Learning State Manual

Kentucky has developed an extensive work-based learning manual to assist local school districts in providing practical instruction to students. The manual provides an overview of the relevant legal issues in student employment including wage and hours laws, child labor laws, and health and safety laws. Kentucky encourages local school districts to become well versed in federal and state law before placing students in work-based learning programs. One legal requirement that is relevant to AED-affiliates is the ban on 14 and 15 year olds working in any job involving manufacturing, mining, boiler/engine room, or repairing any power-driven machinery. For 16 and 17 year olds, there are some exceptions to the hazardous work ban and employers may be able to provide compliant opportunities.

The manual includes resources for securing service learning, mentoring, shadowing, and internship opportunities. The state also provides sample employer agreements that can be filled out for the specific situation. AED-affiliates can use the state-developed program guides and evaluations to ensure that they are providing work-based learning opportunities that meet state educational requirements.

## Additional Resources

- CTE Snapshot:
  - [https://careertech.org/sites/default/files/pictures/Kentucky\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Kentucky_CTESnapshot2015.pdf)
- Kentucky CTE:
  - <http://education.ky.gov/cte/Pages/default.aspx>
- Unite to Serve Program:
  - <http://education.ky.gov/CTE/stuorg/Pages/UnitetoServe.aspx>
- Work-Based Learning Manual:
  - [http://education.ky.gov/cte/Docu%20ments/Kentucky%20Work%20Based%20Learning%20\(WBL\)%20Manual.pdf](http://education.ky.gov/cte/Docu%20ments/Kentucky%20Work%20Based%20Learning%20(WBL)%20Manual.pdf)



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# Career and Technical Education

## Louisiana Playbook



### RELEVANT PATHWAYS

Louisiana has adopted the Career Clusters framework, with 7 targeted pathways, with key programs automotive industry, construction, and manufacturing

### RECENT FUNDING

Louisiana received an estimated \$21,041,943 in Perkins Basic State Grant funds in FY2015 and in FY2016

### KEY STATE DOCUMENTS

- The Jump Start Guidelines establish the focuses of the Jump Start (CTE) programming and detail the goals and expectations of students throughout the program.
- The Louisiana Career Planning Guide provides a wide range of resources to high school age students in order to help encourage them to pursue a career that both interests them and features their strengths.
- HB741 (2015) calls upon the Louisiana Workforce Investment Council to create an integrated workforce delivery system

## State Basics

Louisiana delivers CTE at the secondary level via comprehensive high schools, area CTE centers through Jump Start programs. At the postsecondary level CTE is delivered through the Louisiana Community and Technical College System (LCTCS) with almost 50 campuses across the state. The Success Through Articulation (STArt) has and continues to develop statewide articulation agreements that allow high schoolers to earn college credit for CTE courses. Students can also take advantage of dual enrollment courses that can count toward any LCTCS program. 11<sup>th</sup> and 12<sup>th</sup> grade students can also take advantage of early college programs that allow them to take CTE college courses for dual credit at little to no cost. Professional development is focused on addressing specific local needs and developing programs relevant to local employment opportunities. CTE administrators and school guidance counselors are also encouraged to collaborate with instructors as well as with private industry businesses to help establish important links between education and careers as well as within the community. Postsecondary educators are required to allocate 5% of their time towards professional development that are consistent with the goals outlined in the Perkins Act IV.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Workplace Internships
- Direct Partnership with LCTC System and Schools
- BYF – Build Louisiana
- Apprenticeships
- Workforce Partnerships

## Workplace Internships

Recognizing the importance of both early involvement as well as on the job training (OJT) experience, the internship program developed under the Louisiana DOE's Jump Start program provides practical experience in a professional work environment to CTE students. Internships are divided up into different types based on their eligibility to receive state funds to help defray the costs of programs. Employers can utilize this program to form lasting connections with local School Boards as well as schools, allowing educators to reach out to industry members who can voice their needs as well as their input regarding standards and best practices. Employers can also use this interaction with students as a means of raising awareness of their business and utilize it for future recruitment.



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# Louisiana Playbook



## Direct Partnership with LCTC System and Schools

The Louisiana Community and Technical College System (LCTCS) is comprised of over 50 community and technical colleges spread across the state. At the system level, LCTCS offers workforce development to employers through existing workers training, workforce growth, technical skill development as well as credentialing. LCTCS emphasizes the collaborative nature of workforce development and stresses the importance of established clear communication between all parties. Depending on the nature of the project as well as the long term impacts, schools may partner directly with businesses to address the specific needs of that particular locality. This direct partnership can be incredibly useful for businesses wishing to maintain a constant connection with a school and also need the direct oversight of a school to help facilitate employee development.

## BYF- Build Louisiana

Build Your own Future – Build Louisiana is a unique collaboration of employers, state agencies and industry associations. BYF provides a combination of services to job-seekers. In addition to traditional employment posting and placement services, BYF also offers training programs in technical fields, primarily construction. Coordinated by both the Regents for Higher Education as well as the LDOE and Louisiana Economic Development, this program offers several opportunities for businesses to develop skilled employees as well as recruit individuals for future employment.

## Apprenticeships

Coordinated by the Louisiana Workforce Commission, the apprenticeship program offers both employers and employees to connect with each other while facilitating an individual to have a paid work opportunity while also developing a practical skill. Programs can last anywhere between two and five years depending on the industry. Participants are paid on a progressive pay scale that starts at approximately half and slowly climbs throughout the program.

## Workforce Partnerships

This relatively new program developed by the Louisiana Workforce Commission to encourage and acknowledge businesses that understand the importance of public/partnerships. Businesses that are members enjoy a wide variety of benefits such as additional training opportunities, labor market information, and free recruitment.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Louisiana>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- State Jump Start (CTE) Guidelines
  - <http://doa.louisiana.gov/osr/lac/28v163/28v163.doc>
- LCTC Workforce Training Services
  - <https://www.lctcs.edu/workforce-solutions/>
- Louisiana Workforce Commission's Apprenticeship
  - [http://www.laworks.net/Apprenticeship/APP\\_MainMenu.asp](http://www.laworks.net/Apprenticeship/APP_MainMenu.asp)
- Louisiana Workforce Commission's Workforce Partnerships
  - <http://www.laworks.net/WorkforcePartners.asp>



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### ECONOMIC IMPACT

Per Advance CTE, "middle-skill jobs account for 58 percent of Louisiana's labor market, but only 46 percent of workers in Louisiana possess the required skills."

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 11,100 fewer unemployed individuals
- 32,300 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## Massachusetts Playbook



### RELEVANT COURSES

The Office for Career/Technical Education maintains Vocational Technical Education Frameworks for Diesel Technology (Transportation Occupational Cluster) and Agricultural Mechanics (Agriculture and Natural Resources Occupational Cluster).

### RECENT FUNDING

Massachusetts received an estimated \$17,719,283 in Perkins Basic State Grant funds in FY 2105 and an estimated \$17,958,426 in FY 2016.

### State Basics

In Massachusetts, various CTE opportunities at the secondary level are provided in comprehensive high schools, regional vocational-technical high schools, regional academic schools, county agricultural schools, independent vocational and agricultural schools, and educational collaboratives. Massachusetts Community Colleges offer CTE instruction at the postsecondary level. The state maintains a series of statewide articulation agreements for various CTE subjects between approved secondary schools (Chapter 74-approved programs) and Massachusetts Community Colleges. In order to ensure effective academic integration into CTE studies, Massachusetts operates the Vocational Technical Education Framework, which includes embedded academic requirements that crosswalk to Massachusetts Curriculum Frameworks; crosswalk subjects include English/Language Arts, Mathematics, and Science and Technology/Engineering. The Vocational Technical Education Framework includes “strands” of various types of instruction, including health and safety, technical, employability, management and entrepreneurship, and technological content that is specific to a particular CTE area. In order to ensure instructor effectiveness, “the Massachusetts Vocational Technical Education Regulations mandate professional development including but not limited to the integration of academic and technical education, occupational safety and health, and subject matter” (ACTE).

### Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Program Advisory Committee
- General Advisory Committee
- Work-Based Learning and Cooperative Education

### Program Advisory Committee

Career/vocational and technical education programs operating under the guidelines of the *Vocational Technical Education Regulations* (Chapter 74-approved vocational and technical education programs) are required to maintain a Program Advisory Committee (PAC). Per the Vocational Technical Education Regulations, “Each school committee shall appoint a PAC [that] shall consist of representatives of local business and industry related to the program.” PACs “advise, assist, and support school personnel in order to improve planning, operation, and evaluation in its program area.” Through PACs, members of business and industry shape the delivery of CTE by providing information on “job market trends, technological developments, [or] training alternatives.” Furthermore, PACs participate in the development and approval of new Chapter 74 CTE programs. Assuming the reauthorization of the *Carl D. Perkins Career and Technical Education Act of 2006*, PACs also assist in the development of the Local Plan created by school districts and public-two year colleges looking for federal assistance (*continued on back.*)



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# Massachusetts Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 46 percent of Virginia’s labor market, but only 37 percent of workers in Mass. possess the required skills” (National Skills Coalition).

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 15,200 fewer unemployed individuals
- 38,500 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## PACs (Continued)

PACs may assist in the following (not exhaustive):

- Review of curriculum;
- Review, evaluate, and advise on course materials;
- Advise on methods of instruction;
- Assist in the development of articulated programs and articulation agreements;
- Recommend new or updated equipment;
- Recommend professional development activities.

## General Advisory Committee

Each school committee (that maintains Chapter 74-approved vocational technical education programs) will establish a General Advisory Committee (GAC); membership includes, but is not limited to, chairpersons of the Program Advisory Committees. Members of business and industry that chair a PAC also maintain membership on the GAC. The GAC “advises the school committee...as to the planning, operation, and evaluation of vocational technical instruction provided by programs under its control.” GACs may participate in the following responsibilities:

- Assist in the development of *Carl D. Perkins* Local Plans;
- Assist in the development of articulated programs and articulation agreements;
- Donate materials, equipment, and services;
- Recommend professional development activities or contribute to the professional development of staff;
- Bring special projects to the school or public two-year college;
- Arrange for field trips and other activities;
- Inform the school and public two-year college of opportunities to place students in full-time or part-time jobs or cooperative education.

For more info on PACs and GACs, see the *Career/Vocational Education Advisory Committee Guide*.

## Work-Based Learning

Qualifying CTE students in Massachusetts can participate in cooperative education experiences, where they implement the skills they have learned in the classroom in a real-world, industry setting. Successful candidates must receive the endorsement of their lead CTE instructor as well as various administrators before they may participate. This ensures that employers participate in the continued development of *high-quality* students. Cooperative education experiences afford employers a great chance to attract and develop new talent to fill in future employment needs. Apart from the requirements students must meet to participate, they are compensated for their work, further incentivizing high levels of performance. Employers that are interested in developing these opportunities should contact their local CTE program, Program Advisory Committee, and/or General Advisory Committee. Furthermore, employers should be aware of relevant federal and state child labor laws that govern cooperative education experiences.

## Additional Resources

- Chapter 74 Career/Vocational Technical Education Program Directory
  - <http://www.doe.mass.edu/cte/programs/directory.pdf>
- Mass. Department of Elementary & Secondary Education, *Career/Vocational Education Advisory Committee Guide*;
  - <http://www.doe.mass.edu/cte/resources/acguide.pdf>
- Sample Cooperative Education Application
  - [http://www.doe.mass.edu/cte/programs/coop\\_ed/smpl\\_app.pdf](http://www.doe.mass.edu/cte/programs/coop_ed/smpl_app.pdf)
- Cooperative Education Site Safety Checklist
  - [http://www.doe.mass.edu/cte/programs/coop\\_ed/smpl\\_checklist.pdf](http://www.doe.mass.edu/cte/programs/coop_ed/smpl_checklist.pdf)
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Advance CTE State Profile
  - <https://www.careertech.org/Massachusetts>



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# Career and Technical Education

## Maryland Playbook



### RELEVANT PATHWAYS

Maryland maintains both state programs of study and local programs of study. Five public school systems offer a Medium-Heavy Truck Technician state program that is aligned with NATEF.

### RECENT FUNDING

According to ACTE, Maryland received an estimated \$15,147,766 in Perkins Basic State Grant funds FY 2015 and \$15,166,947 in FY 2016.

### KEY STATE LEGISLATION

- *College and Career Readiness and College Completion Act of 2013.*

## State Basics

CTE at the secondary level in Maryland is offered through comprehensive high schools, career and technology high schools, and CTE centers, while public community colleges, private career colleges and apprenticeship programs offer CTE at the postsecondary level. Maryland maintains 10 clusters based on the Career Clusters framework, including clusters in Transportation Technologies and Manufacturing, Engineering and Technology. Maryland's secondary and postsecondary levels maintain both statewide and local articulation agreements. According to ACTE, former Governor O'Malley authorized the Early College Innovation Fund to help CTE students in their efforts to enter Early College Access programs that offer accelerated pathways for CTE and STEM students. Maryland also mandates that professional, certified educators maintain an individualized professional development plan and receive, at minimum, six hours of course credits every five years. Professional learning communities also provide an opportunity for teachers to coordinate with industry to review instructional methodologies. Furthermore, ACTE finds that Maryland bases its CTE program standards "on the most appropriate, reliable, and valid technical standards available."

## Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Program Advisory Committees
- Advocacy and Donations
- Work-Based Learning and Professional Development

## Program Advisory Committees

According to the Mission and Principles of Maryland CTE Programs, CTE programs are developed in conjunction with all relevant stakeholder groups. Maryland invites members of business and industry to contribute to the development, implementation, and evaluation of high-quality CTE programs through their membership in program advisory committees (PAC). Each local school system maintains a program advisory committee for all programs or cluster of closely related programs offered by that local school system. Program Advisory Committees collaborate with CTE Local Directors and teachers in order to suggest changes aimed at achieving program improvements. Furthermore, Maryland's *Mission and Principles* requires that CTE programs are based on the most appropriate, reliable and valid technical and academic standards available. Program advisory committees "validate the most current technical standards and adopt or adapt those appropriate for the needs of the program" (*continued on back*).



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# Maryland Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 48 percent of Maryland’s labor market, but only 39 percent of workers in Maryland possess the required skills” (National Skills Coalition). A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 16,100 fewer unemployed individuals
- 33,700 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## PAC (Continued)

If no appropriate standards exist, the program advisory committee will develop a set of standards in coordination with the local school system; this includes “outlining standards to define the academic, career, and technical skills required for completion of the program. The academic standards are based on Maryland’s state curriculum.”

## Advocacy and Donations

If a local school system does not offer a specific CTE program, members of business and industry may contact their local CTE director and discuss the adoption or development of a new program. It should be noted that program decisions are based on labor market trends and value-added criteria. Businesses can also encourage CTE development through donations. Medium-Heavy Truck Technician Programs are expensive to initiate; donations can mitigate startup costs and encourage localities to adopt these programs. Members of business and industry can also donate equipment to local programs. There is also a significant amount of advocacy to be done beyond the local level. The key federal legislation, the *Carl D. Perkins Career and Technical Education Act of 2006*, has been up for reauthorization since 2013. The Perkins Act provides key funding to state CTE programs. A bill reauthorizing the Perkins Act, the *Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act*, was introduced and passed in the House of Representatives during the 114<sup>th</sup> Congress, yet has not passed the Senate. Members of business and industry should express their support for H.R. 5587 to their elected federal representatives.

## Work-Based Learning and Professional Development

Members of business and industry are encouraged to offer job shadowing experiences, internships, and work study opportunities. Furthermore, businesses may serve as field-trip destinations to provide a glimpse into the interesting and rewarding careers that can result from CTE. According to the *Mission and Principles of Maryland CTE Programs*, work-based learning opportunities “are organized in partnership among the local school system, business and industry, labor organizations, community agencies, and the student’s family.” Furthermore, some Maryland CTE programs allow students to participate in an industry-mentored or capstone project. These can be completed in conjunction or in place of a more traditional work-based learning experience. Businesses and industry members should contact local CTE directors as well as Maryland’s Workers’ Compensation System (which covers students participating in unpaid work-based learning experiences) for more information regarding participation. Businesses may also invite teachers to the workplace as an informal type of professional development. Such opportunities help ensure that instructors are familiar with new equipment and current industry practices.

## Additional Resources

- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Advance CTE Profile
  - <https://www.careertech.org/Maryland>
- Mission and Principles of Maryland CTE Programs
  - <http://www.mdcteprograms.org/programs.php>
- Industry Certification
  - <http://www.mdcteprograms.org/certification.php>



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# Career and Technical Education

## Maine Playbook



### RELEVANT PROGRAMS

Maine maintains 10 career clusters (a modified version of the Career Cluster framework). Within its Transportation cluster, it offers programs in Heavy Equipment Maintenance Technology/Technician as well as Construction/Heavy Equipment/Earthmoving Equipment Operation.

### RECENT FUNDING

Maine received an estimated \$5,488,705 in FY 2015 in Perkins Basic State Grant funds and an estimated \$5,496,906 in FY 2016.

### KEY STATE LEGISLATION

- *An Act to Enhance Career and Technical Education* (2012)
- *An Act To Create an Educational Collaborative Partnership To Implement a Program That Enables CTE Students to Earn College Credits while Attending High School*
- Maine Title 20-A Education, Part 4 Specific Education Programs, Subpart 2 Applied Technology Education, Chapter 313 Career and Technical Education

## State Basics

Maine's predominant method of offering CTE at the secondary level is through 27 area CTE regions or centers which host students from local school districts. Maine offers CTE at the postsecondary level through its community college system; the Maritime Academy also offers CTE training. According to ACTE, the state integrates traditional academics into CTE curriculum via its Programs of Study. The Math-in-CTE program (developed by the National Research Center for Career & Technical Education) also facilitates academic and CTE integration by providing a professional development opportunity where CTE instructors work with mathematics teachers to create coursework that incorporates traditional academics. Furthermore, the state's secondary CTE centers/regions and community colleges develop and maintain articulation agreements to award college credit for courses taken in high school (articulation agreements include dual credit and escrow credit). Maine S.P. 506 (2013) and *An Act to Enhance CTE* (2012) have also bolstered the ability of high school students to earn college credit. Finally, Maine encourages business and industry participation in the development of state-required CTE standards and in selecting credentials to be used in CTE programs.

## Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Industry Standards Industry Stakeholder Group
- Program Advisory Committee
- Cooperative Education
- Local Outreach and Perkins Act Advocacy

## Industry Stakeholder Groups

Industry Stakeholder Groups allow members of business and industry to directly affect the standards of CTE delivery in the state. Per Maine law, "the CTE commissioner shall establish an industry stakeholder group to recommend industry standards to be met in each program offered by a CTE region, center, or affiliated unit. The stakeholder group shall recommend national standards for each program group; in the case that the stakeholder group does not recommend a national standard for a program, the commissioner shall convene one or more stakeholder groups to adopt or create state industry standards for that program" [ 2011, c. 679, §10].

Industry Stakeholder Groups represent an opportunity to affect the skills that are being taught through CTE courses. In doing so, employers help ensure that students are prepared for the workforce upon graduation.



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# Maine Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 53 percent of Maine’s labor market, but only 48 percent of workers in Maine possess the required skills” (National Skills Coalition). A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 3,800 fewer unemployed individuals
- 9,200 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## Program Advisory Committee

Multiple groups participate in the development and review of new and/or existing programs. One such group is the Program Advisory Committee, a body made up of a program’s teacher, past students, secondary constituents, postsecondary constituents, and business and industry partners. Per the Maine DOE, the group must meet at least once a year “to review the status of a particular CTE program, verifying that its curriculum, instruction, assessment and equipment are all up-to-date and representative of industry practices and needs.” Furthermore, state guidelines for the establishment of a program require an endorsement from the Program Advisory Committee.

Like Industry Stakeholder Groups, Program Advisory Committees represent a direct link to the development of effective CTE programs.

## Cooperative Education (Work-Based Learning)

The Maine DOE describes cooperative education as “secondary CTE programs that include classroom instruction related to workplace skills as well as paid on-the-job training that complements this instruction.” The state offers several sample training plans on its website to provide a framework on which employers can base their own cooperative education plans. Currently, Cianbro maintains a Mechanic Helper cooperative education plan for students interested in gaining experience in the maintenance of heavy equipment. This can be used as a guideline for establishing other cooperative education opportunities for students enrolled in the Heavy Equipment Maintenance Technology/Technician program.

## Local Outreach and Advocacy

One of the largest hurdles to closing the skills gap is the belief that success often requires a two or four-year degree. While all students should have the opportunity to attend college if desired, Maine’s youth should also be informed about the excellent career opportunities that may not necessarily require a two or four-year degree. Local outreach efforts, such as that led by Governor LePage and the Manufacturers Association of Maine, provide information about rewarding career opportunities available through CTE.

Furthermore, the key piece of federal legislation, the *Carl D. Perkins Career and Technical Education Act of 2006*, has been up for reauthorization since 2013. The *Perkins Act* provides key funding to state CTE programs. A bill reauthorizing the *Perkins Act*, the *Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act*, was introduced and passed in the House of Representatives during the 114<sup>th</sup> Congress, yet has not passed the Senate. Members of business and industry should express their support for H.R. 5587 to their elected federal representatives.

## Additional Resources

- Advance CTE State Profile
  - <https://www.careertech.org/Maine>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Maine DOE Cooperative Education
  - <http://www.maine.gov/doe/cte/schools/coop.html>
- Program Proposal Guidelines
  - <http://www.maine.gov/doe/cte/schools/documents/guide.pdf>
- Maine CTE FAQs
  - <http://www.maine.gov/doe/cte/resources/documents/ctefaq.html>
- Maine State Snapshot
  - [https://careertech.org/sites/default/files/pictures/Maine\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Maine_CTESnapshot2015.pdf)



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# Career and Technical Education

## Michigan Playbook



### RELEVANT PATHWAYS

Heavy Industrial Equipment Maintenance Technologies under the Transportation, Distribution, and Logistics Cluster

### RECENT FUNDING

- \$37,156,738 Perkins
- Federal funding allocated to programs 60% based on employment demand and placement rates, 40% based on district enrollment and contact hours
- State budget provisions for CTE and workforce development programs include a \$10 million increase in 2016

### KEY STATE LEGISLATION

- 1996 PA 160: Postsecondary Enrollment Options Act
- 2000 PA 258: Career and Technical Preparation Act
- Michigan Association of Collegiate Registrars and Admissions Officers (MARCO) Transfer Agreement

## State Basics

Michigan CTE courses are delivered through comprehensive high schools and CTE centers with half-day programs. CTE is also available at the postsecondary level through community colleges, four-year colleges, and prison facility programs. Secondary CTE programs are required to have curriculum alignment with at least one postsecondary institution in Michigan. High school students have a postsecondary enrollment option to earn dual credit through CTE programs. Secondary CTE courses are fully integrated with standard academic coursework. Secondary CTE programs are also required to have advisory committees that include workplace representatives. These committees guide curriculum development and ensure the programs is meeting local market place needs.

## Access Points

The following are opportunities for employers to become involved:

- Local Advisory Committees for Secondary Programs
- Work-Based Learning, Internships, Apprenticeships
- Career Education Planning Districts
- Office of Career and Technical Education Curriculum Development

## Detroit Case Study

Local areas are able to institute innovative and relevant programs to meet the demands of the local market. The City of Detroit conducts a CTE program where city leaders determine current workforce shortages and schools develop programs to meet those shortages. The city also operates a Registered Apprentice Program that works with community partners to place students in appropriate businesses for work-based learning experiences. This program could serve as a template for other local initiatives.



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## ECONOMIC IMPACT

By 2018, Michigan 59% of all jobs will require some training beyond high school including 451,000 that will require certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$1,037 higher median per capita income
- 42,900 fewer unemployed
- 69,400 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACT

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# Michigan Playbook



## Pools of Experts

CTE teachers are required to have technical experience in the field they are instructing. There are also regional and local advisory committees to ensure that the curriculum is aligned with industry standards. The Michigan system does an excellent job of ensuring industry expert involvement throughout all levels of state education and can serve as a model for states wishing to implement similar involvement. This also provides many opportunities for AED-affiliates to influence curriculum development.

## Best Practices List

### Flexible and Responsive to Workforce Needs

- The state CTE plan is comprehensive and incorporates labor statistics, employment projections, and input from industry heads to define high-demand occupations.

### Career Services System

- There is an online career navigation system called MCCTE Navigator that provides real-time access to CTE program standards. However, it does not serve specifically as a career placement service and could use greater stakeholder input.

## Career Education Planning Districts

There are 54 Career Education Planning Districts (CEPDs) that generally follow intermediate school district boundaries. The CEPDs work to facilitate regional planning efforts and align curriculum with market-based need. The districts also collaborate with local schools to deliver CTE programs and services at the secondary level. All such secondary CTE programs are required to align with state technical education standards. CEPDs allow such state standards to be applied to local areas in ways that both meet requirements for funding and provide students with the best opportunities to find work in their own local communities. AED-affiliates should become engaged in their local CEPDs in order to ensure that available employment opportunities are effectively presented to local students.

## Additional Resources

- CTE Snapshot: [https://careertech.org/sites/default/files/pictures/Michigan\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Michigan_CTESnapshot2015.pdf)
- Michigan State Five Year Plan: <http://s3.amazonaws.com/PCRN/docs/stateplan/MI5YearStatePlan.pdf>
- Michigan Department of Education CTE: [http://www.michigan.gov/mde/0,1607,7-140-6530\\_2629---,00.html](http://www.michigan.gov/mde/0,1607,7-140-6530_2629---,00.html)
- CTE Navigator Website: <http://ctenavigator.org/>



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# Career and Technical Education

## Minnesota Playbook



### RELEVANT PATHWAYS

Heavy Equipment  
Maintenance Pathway  
available

### RECENT FUNDING

- \$16,684,637 Perkins
- State funding reimburses up to 35% of CTE program expenditures
- 5% of postsecondary funding is dependent on meeting performance goals

### KEY STATE LEGISLATION

- HF630: Restructured the levy/revenue system for district CTE programs
- MnSCU Policy 3.37: Sets up MN Transfer Curriculum
- Postsecondary Enrollment Options (PSEO) Act: Allows concurrent enrollment

## State Basics

Minnesota delivers CTE programs at the secondary level through comprehensive high schools, cooperatives, and centers. At the postsecondary level, CTE is delivered through technical and community colleges. CTE curriculum is fully integrated with traditional high school academic courses. The Minnesota state CTE plan requires that each school district develop local standards and assessments to meet local needs. These standards are based on the state CTE curriculum. Minnesota's Postsecondary Enrollment Option (PSEO) is used extensively by high school students to take courses that meet both high school and college credit requirements. All public colleges and most private colleges accept credits earned through PSEO.

## Access Points

The following are opportunities for employers to become involved:

- Work-Based Learning, Internships, Apprenticeships, Co-operative Education
- School District Curriculum Development
- State-Wide Third Party Career Pathways Assessments
- Minnesota Career Information System

## Heavy Equipment Maintenance Degrees

Minnesota CTE programs include a pathway to earn a certificate in Heavy Construction Equipment Maintenance, a diploma as a Heavy Construction Equipment Mechanic, or an Associate Degree in Heavy Construction Equipment Technology. These certifications can serve as model programs for other states to implement in revamping their CTE programs to meet current market demand.



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## ECONOMIC IMPACT

By 2018, 61% of all Minnesota jobs will require some training beyond high school, including 298,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$1,270 higher median per capita income
- 15,919 fewer unemployed
- 43,176 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Minnesota Playbook



## Career Services System

The Minnesota Career Information System (MCIS) is available to connect students with relevant job openings. The program uses a fee-based subscription and is available in 80% of Minnesota schools. Users include individual students, schools, and organizations. The program can be used to create a personalized learning plan for each student. However, the system focuses largely on students alone and does not actively engage industry leaders.

## Best Practices List

### Alignment between Secondary and Postsecondary

- Minnesota requires each local consortia to implement career pathways that span at least two years of high school and the first two years of postsecondary education.

### Employer Role in Developing Programs

- Minnesota uses third party assessments that are validated by teachers and industry leaders to develop and enhance its career pathways.

## Systematic High School Redesign

In February 2011, Governor Mark Dayton launched a 7-Point Plan for Excellence in Education. The plan provides seven points that lay the framework for a long-term vision for K-12 education in the state in the coming years. As part of the plan, the state is implementing a Systematic High School Redesign that provides research-based information and resources to high schools in implementing the initiative's five core components:

1. Rigorous and relevant course-taking for all students, especially at transition points
2. Personalized learning environment for each student, with the support of parents and other adult mentors
3. Multiple pathways to postsecondary training or college to achieve a minimum K-14 education
4. High-quality teacher and principal leadership
5. Student assessment and program evaluation data used to continuously improve school climate, organization, management, curricula and instruction

## Additional Resources

- CTE Snapshot:
  - [https://careertech.org/sites/default/files/pictures/Minnesota\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Minnesota_CTESnapshot2015.pdf)
- Minnesota State Plan:
  - <http://s3.amazonaws.com/PCRN/docs/stateplan/MN5YearStatePlan.pdf>
- Minnesota State Colleges & Universities CTE
  - <http://www.cte.mnscu.edu/>
- Minnesota Career Information System (MCIS):
  - [education.state.mn.us/MDE/dse/ccs/MCIS/](http://education.state.mn.us/MDE/dse/ccs/MCIS/)



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# Career and Technical Education

## Missouri Playbook



### RELEVANT PATHWAYS

- Construction Maintenance
- Mobile Equipment Maintenance

### RECENT FUNDING

- \$21,276,343 Perkins
- State CTE Enhancement Grant Program reimburses LEAs for CTE start-up and improvement costs
- Additional funds distributed through Effectiveness Index Formula based on enrollment and placement rates

### KEY STATE LEGISLATION

- Section 167.233 RSMo: Offers postsecondary course options to high school students
- Section 173.005(7): Requires guidelines to promote and facilitate student transfers
- SB701: Revises school scoring guide to give points for partnering with business to provide career pathways
- HB1189: Allows certain agriculture or CTE courses to fulfill graduation requirements

## State Basics

In Missouri, secondary CTE courses are delivered through comprehensive high schools and area career-technical centers. At the postsecondary level, CTE is delivered through the state's community colleges, one state technical college, and four-year institutions that offer associate degrees. Missouri is currently developing programs to meet the needs of incarcerated youth and adults.

The state has created competency profiles for all CTE courses with objectives and task statements for teachers to use in developing curriculum. The profiles include foundation knowledge and skills that have been validated by Missouri industry advisory councils. Each course is also aligned with the Missouri Show Me Standards. Industry Advisory Councils provide an opportunity for AED-affiliates to be involved in curriculum development.

## Access Points

The following are opportunities for employers to become involved:

- Work-Based Learning, Internships
- Missouri Registered Apprenticeship Program
- Career and Technical Student Organizations
- Industry Advisory Committees
- Local Education Agencies

## Initiatives

Missouri has been chosen to participate in Pathways to Prosperity, a national education initiative that builds career pathways for high school students. The program works with the MO Department of Education to achieve the goal of all graduating students to be career or college ready.

Project Lead the Way (PLTW) provides real-world learning experiences for students interested in applied math and science areas. PLTW Launch introduces students in K-5 to STEM fields. PTLW Gateway is geared toward grades 6-8. In high school, PTLW splits into engineering, biomedical science, and computer science programs.



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## ECONOMIC IMPACT

By 2018, 58% of all Missouri jobs will require some training beyond high school, including 321,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$867 higher median per capita income
- 15,900 fewer unemployed
- 38,400 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACT

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# Missouri Playbook



## Funding High-Quality Programs

State funding requires recipients to show efforts of partnering with industry leaders in performing a gap analysis between program outcomes and industry-recognized knowledge and skills. Schools must also take steps to address any identified gaps, provide comprehensive student career guidance, and develop a culture of continuous improvement.

## Best Practices List

### Alignment between Secondary and Postsecondary and Articulation Agreements

- SB381 created the Innovation Education Campus Fund that promotes educational partnerships between high schools and Missouri postsecondary institutions.

### Career Services System

- Missouri Connections serves as a central career planning website for students, parents, and educators. The website allows users to develop a career plan, but does not directly connect students with employers and does not allow for direct industry input.

## Career and Technical Student Organizations

Missouri's educational program development is locally dependent. The state uses Local Education Agencies (LEAs) to allocate funding and develop programs that are tailored to local needs. One method that can be used to promote CTE programs at the local level is a Career and Technical Student Organization (CTSOs). The organization provides opportunities for students to choose an occupational area and develop the skills required in that profession. The CTSOs sponsor student conferences, competitions, workshops, and community service activities. Local school districts can integrate CTSOs into instructional programs as a supplement to regular classroom instruction. The U.S. Department of Education recognizes CTSOs as being an integral part of CTE programs. CTSOs provide an opportunity for AED affiliated companies to connect with local school districts and encourage interest in open industry technician positions.

## Additional Resources

- State Snapshot:
  - [https://careertech.org/sites/default/files/pictures/Missouri\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Missouri_CTESnapshot2015.pdf)
- Missouri State Plan:
  - <http://s3.amazonaws.com/PCRN/docs/stateplan/MO5YearStatePlan.pdf>
- Missouri CTSOs:
  - <https://dese.mo.gov/college-career-readiness/career-education/career-technical-student-organizations>
- Missouri Career Connections:
  - <https://mocis.intocareers.org/materials/portal/home.html>



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# Career and Technical Education

## Mississippi Playbook



### RELEVANT PATHWAYS

- Heavy Equipment Maintenance & Repairer
- Industrial Maintenance
- Aircraft Mechanic

### RECENT FUNDING

- \$13,363,550 Perkins
- State funding based on number of instructional units per student
- States pays 50% of instructor salaries and provides cost reimbursements
- Postsecondary CTE receives base funding and weighted funding by program type

### KEY STATE LEGISLATION

- Mississippi Works Dual Enrollment-Credit Option
- HB1071: Established the Education Achievement Council
- HB1163: Recommends state leaders develop comprehensive reports on early college high schools
- State Board Policy 3804: Provides options to meet high school graduation through alternative measures

## State Basics

Mississippi CTE is delivered at the secondary level through comprehensive high schools and area career centers. At the postsecondary level, CTE is delivered through community and junior colleges. Every CTE program in Mississippi follows a standardized state curriculum. The state legislature established the Mississippi Works Dual Enrollment-Credit Option in 2012 that creates a program that allows potential or recent students dropouts to enroll dually in their home school and a local community college. The Mississippi Career Pathway graduation option allows 1 credit of integrated technology and 4 credits of CTE to fulfill high school graduation requirements. Postsecondary articulation agreements allow students to transfer credit between the state's public universities, community, and junior college.

## Access Points

The following are opportunities for employers to become involved:

- Career Pathway Experience (CPE): school to work transition program
- Program area curriculum revision teams
- Local Education Agencies (LEAs)
- Work-Based Learning, Internships, Apprenticeships
- Student Organizations

## Mississippi Works

Governor Phil Bryant introduced the Education Works agenda to create reform initiatives to improve college and career readiness.

Mississippi Works is a program that focuses on state economic improvement through workforce development. The program works to connect employers and potential employees through career exploration tools, military to civilian workforce transition, and guides that connect college majors to career fields within the state. AED-affiliates can make use of this program by posting job openings and ensuring that there is adequate information for individuals exploring the heavy machinery technician field.



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## ECONOMIC IMPACT

By 2018, 55% of all Mississippi jobs will require some training beyond high school, including 136,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$859 higher median per capita income
- 9,600 fewer unemployed
- 24,730 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Mississippi Playbook



## Technical Skills Assessments

Beginning in 2013, Mississippi began assessing CTE students and CTE programs with the Career Planning and Assessment System (MS-CPAS2) certification exams and performance-based assessments. MS-CPAS2 works to ensure local programs are producing students with the skills needed to succeed in the workforce. The goal is to ensure that CTE instruction is occurring at the highest level possible.

Mississippi also partners with Kansas and Colorado through the Career Pathways Assessment System. This system creates standardized assessments for secondary CTE programs. The state is actively working to ensure state CTE programs are effectively producing workplace-ready students.

## Professional Development

In addition to the standard in-person professional development programs, Mississippi offers online educator development. The sessions cover a wide variety of topics and allow teachers to receive Continuing Education Units through a flexible and individualized format. This innovative format could be implemented in other states to reduce costs and provide quality training to teachers in rural areas.

## CTE State Standards

Mississippi uses a state-wide CTE curriculum that Local Education Agencies must use to create localized programming. The state curriculum is revised every four years by a team of program area instructors to ensure that program guidelines are effective. The revision team considers field research and personnel surveys to evaluate courses. The state also looks at national and state academic standards and the current professional standards in the relevant industry. New technology development is incorporated into state program standards.

The Mississippi State University Research and Curriculum Unit provides each Career Pathway plan online for public access. The information available includes the state curriculum plan, course blueprints, programs of study, career pathways maps, facility guides, teacher resource documents, and equipment specifications for each Career Pathway. The public disclosure of this information creates a transparent environment where industry leaders can readily access current academic standards. This accessibility allows AED-affiliates to provide relevant feedback to the state and influence future Career Pathway development.

## Additional Resources

- State Snapshot: [https://careertech.org/sites/default/files/pictures/Mississippi\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Mississippi_CTESnapshot2015.pdf)
- State CTE Plan: <http://s3.amazonaws.com/PCRN/docs/stateplan/MS5YearStatePlan.pdf>
- MS Office of Career and Technical Education (OTCE): <http://www.mde.k12.ms.us/OTCE>



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# Career and Technical Education

## Montana Playbook



### RELEVANT PATHWAYS

Montana has adopted the Career Clusters framework, into six career fields. It has relevant pathways in agricultural technology and machinery, automotive technicians, welding, and fabrication.

### RECENT FUNDING

Montana received an estimated \$5,159,268 in Perkins Basic State Grant funds in FY2015 and an estimated \$5,163,542 in FY2016

### KEY STATE DOCUMENTS

- The State CTE Guidelines establish the general requirements of CTE curriculum as well as the specific program requirements. It also outlines the role of local advisory committees
- Montana Code 20-9-706 establishes the Running Start program which enables school districts establish agreements with local postsecondary institutions allowing students to receive dual credit for specific CTE courses
- House Bill 86 (2012) (HB86) was a key piece of legislature that establishes increases funding to key Career and Technical Student Organizations (CTSOs), notably TSA and SkillsUSA.

### State Basics

In Montana, secondary CTE is delivered throughout the state by comprehensive high schools. At the Postsecondary level CTE is available from community colleges, tribal colleges, and at select four-year colleges and universities. Between recent statewide articulation initiatives and the Running Start program, students are able to articulate CTE courses taken in high school to the postsecondary level. Montana's professional development focuses on developing Programs of Study, known in Montana as Big Sky Pathways. These pathways are continually being developed by the Office of the Commissioner of Higher Education, with an emphasis on creating a smooth transition from secondary to postsecondary education. Development emphasizes the integration of CTE and STEM curriculum into academics, utilizing the Math in CTE and Project Lead the Way models. Additionally, the Office of Public Instruction offers an annual conference to new and inexperienced CTE educators emphasizing the role of CTOSs such as SkillsUSA and TSA in Montana's CTE program. Montana ACTE also provides an annual development conference which focuses on developing Common Core Standards within CTE curriculum, and offers continuing education units to those in attendance

### Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- CTOSs- TSA & SkillsUSA
- Local Advisory Committees & State Advisory Board
- Cooperative Work Experiences
- MCIS and Registered Apprenticeships

### CTOSs- SkillsUSA and TSA

Recognizing the role of Career and Technical Student Organizations (CTOSs) in students' personal development, Montana has emphasized participation in these programs as a part of its CTE curriculum. In the Trade and Industrial Education programs, educators are required to act as advisors to a local SkillsUSA chapter and maintain the chapter's good standing. In addition to SkillsUSA, TSA provides resources for students interested in AED relevant pathways and maintains numerous chapters at schools throughout the state. These organizations provide businesses to collaborate with students in an environment outside of the classroom and can serve as a method of recruitment and input.



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# Montana Playbook



## Local Advisory Committees & State Advisory Board

To make local programs responsive to specific needs of localities, advisory committees may be established at the local school level for specific CTE programs. These committees are to be comprised of a majority of non-educators, primarily local private businesses and community members with relevant industry experience. These committees help advise local school boards, and CTE educators and administrators on community employment needs, industry best practices and credentialing, and professional development. Paralleling the local committees is the State CTE Advisory Council. This council acts in a similar role as the local committees, but instead advising the state Board of Public Education for secondary education and the Board of Regents for postsecondary education.

## MCIS and Registered Apprenticeship

MCIS is the Montana Career Information System which provides career services resources along with employment connection opportunities, developed under the Montana Department of Labor and Industry's Workforce Services Division. The Department of Labor and Industry also maintains a registered apprenticeship program that connects individuals seeking technical apprenticeship with employers seeking apprentices.

## Cooperative Work Experiences

According to state CTE guidelines, all programs are required to have a cooperative work experience component. The goal of this required component is to establish relationships between educators and employers to allow for input from businesses to CTE coursework, and to facilitate connections between students and employers for possible future employment opportunities. Additionally, by having a practical working component, students have the opportunity to experience a professional setting they would otherwise not encounter in a traditional classroom setting. Local schools are responsible for establishing and supervising work components, and must coordinate with employers to secure individual arrangements. By utilizing local advisory committees, industry businesses can establish connections with schools to facilitate these required work components.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Montana>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- State CTE Guidelines
  - <http://opi.mt.gov/pdf/CTE/combinedguidelines.pdf>
- HB86 Information
  - [http://opi.mt.gov/programs/CTAE/CTE.html#gpm1\\_8](http://opi.mt.gov/programs/CTAE/CTE.html#gpm1_8)
- Big Sky Pathways
  - <http://mus.edu/BigSkyPathways/default.asp>
- Montana Career Information System
  - <https://mtcis.intocareers.org/materials/porta/home.html>
- Montana Registered Apprenticeship
  - <http://apprenticeship.mt.gov/>



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### ECONOMIC IMPACT

Per Advance CTE, "middle-skill jobs account for 53 percent of Montana's labor market, but only 49 percent of workers in Montana possess the required skills."

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 2,100 fewer unemployed individuals
- 4,900 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## N. Carolina Playbook



### RELEVANT PATHWAYS

North Carolina maintains a Power, Structural and Technical System career pathway within its Agricultural Education Career Cluster at the secondary level.

Wake Tech Community College offers a program in Diesel and Heavy Equipment Technology.

### RECENT FUNDING

North Carolina received an estimated \$36,080,089 in Perkins Basic State Grant funds in FY 2105 and an estimated \$35,851,876 in FY 2016.

### KEY STATE LEGISLATION

- House Bill 769/ S.L. 2011-91  
High School to Work Partnership

## State Basics

There are several different providers of CTE at the secondary level in North Carolina, including comprehensive high schools, CTE-focused high schools, career academies, and early/middle college schools. The state's community colleges provide CTE at the postsecondary level. There are various attempts made at academic integration in secondary schools across the state. Per ACTE, "the North Carolina CTE Essential Standards and Programs of Study incorporate and align with academics, [and] the Future-Ready Occupational diploma track includes Occupational Course of Study academic courses." Career academies, STEM education, and thematic schools also integrate academics with CTE instruction. Finally, the Southern Regional Education Board is working on mathematics integration into CTE curriculum. To ensure that students have the opportunity to earn college credit while still in high school, the state maintains a "Statewide Articulation Agreement developed by NCDPI and NCCCS staffs working with secondary and postsecondary instructors and content experts in addition to multiple dual enrollment opportunities" (Perkins State Plan). Community colleges can also develop local articulation agreements with secondary institutions. To ensure instructor effectiveness, North Carolina maintains multiple forms of professional development, including a conference that they sponsor with NC ACTE.

## Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Business and Community Partnerships
- Advocacy
- Advisory Committees
- Work-Based Learning

## Business and Community Partnerships

The state encourages businesses and CTE providers to develop partnerships to bolster the delivery of CTE within North Carolina. In 2011, the General Assembly passed House Bill 769 to encourage the development of such partnerships and to provide guidance to achieve them. These partnerships allow businesses to provide necessary resources to CTE students and instructors, including but not limited to: work-based learning opportunities, professional development, and equipment donations where permitted. Through partnerships, businesses are well positioned to advise CTE programs on current industry practices, curriculum adjustments, and opportunities for students beyond graduation. They can also enhance the skills of instructors by providing teachers externship experiences during the summer.

## Advocacy

Members of business and industry are encouraged to speak with local education agency representatives about existing CTE options or the opportunity to establish a program where one does not already exist; they should be prepared to present evidence for a local need (i.e. career outlooks, openings, etc.).



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# NC Playbook



## Advisory Committees

Members of business and industry should investigate opportunities to join the Statewide Business Network. The purpose of the network is:

- “[Creating] and maintaining a business-education advocacy group that addresses Career and Technical Education issues on a regular basis, and;
- Establish a permanent liaison between business and education that provides for structured continuous communications at multiple levels for Career and Technical Education” (State Board of Education, Department of Public Instruction, *Developing High Quality CTE Programs Through Business Engagement*).

Businesses should also seek to participate on District CTE Advisory Committees, which “advise faculty and administration on the maintenance, extension and improvement of the total career and technical education program,” and Program of Study/Career Cluster Advisory Committees, which “work with the individual program of study, career cluster or discipline level and is concerned with matters such as curriculum content, equipment, facilities and placement of graduates” (*Developing High Quality CTE Programs Through Business Engagement*).

The Department of Public Instruction establishes three roles for advisory committees:

- “To advise—the advisory committee assesses specific areas of the career and technical education program and makes recommendations designed to improve that specific area;
- To assist—the advisory committee helps the instructor(s) and/or administrator carry out specific activities;
- To support and advocate—the advisory committee promotes the career and technical education program throughout the community.”

## Work-Based Learning and Professional Development

Members of business and industry are encouraged to offer job shadowing experiences, internships and externships, cooperative work experiences, and work study opportunities for students. The aforementioned advisory committees may develop subcommittees (that lack policymaking authority) to foster opportunities for students enrolled in CTE programs and to identify career placement options for students upon graduation. Work-based learning experiences are an excellent opportunity to develop talent that could one day fill a business’s employment needs. Businesses should contact their local CTE programs to discuss options for creating work-based learning opportunities.

Businesses should also consider offering summer externships to CTE instructors. Professional development is critical to developing students’ skills, and externships are a great opportunity to ensure that CTE instructors are current on industry practices, technology, and equipment. Professional development is not limited to externships, however, as businesses should reach out to instructors on a regular basis to update them regarding industry trends.

## Additional Resources

- Advance CTE State Profile
  - <https://www.careertech.org/North-Carolina>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Department of Public Instruction, *Developing High Quality CTE Programs through Business Engagement*
  - [https://www.icpsnc.org/uploaded/Documents/Departments/CTE/Developing\\_High\\_Quality\\_CTE\\_Programs\\_Through\\_Business\\_Engagement.pdf](https://www.icpsnc.org/uploaded/Documents/Departments/CTE/Developing_High_Quality_CTE_Programs_Through_Business_Engagement.pdf)
- Department of Public Instruction, *North Carolina CTE Planning Guide*
  - <http://www.ncpublicschools.org/docs/cte/curriculum/planning.pdf>
- *North Carolina Career Clusters Guide*
  - <http://www.dpi.state.nc.us/docs/cte/curriculum/clusters/2015-nc-career-clusters-guide.pdf>



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## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 56 percent of North Carolina’s labor market, but only 46 percent of workers in possess the required skills” (National Skills Coalition).

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 25,100 fewer unemployed individuals
- 73,500 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Career and Technical Education

## North Dakota Playbook

### RELEVANT PATHWAYS

Heavy Equipment  
Operation under  
Construction Technology

Need to develop  
Equipment Servicing  
Program

### RECENT FUNDING

- \$4,214,921 Perkins
- State funding reimburses districts for CTE at various rates based on program type
- Postsecondary funding is based on credit hours earned

### KEY STATE LEGISLATION

- General Education Requirements Transfer Agreement (GERTA) for ND/MN reciprocity
- NDCC 15.1-21-02.4 North Dakota CTE Scholarship



## State Basics

North Dakota currently delivers secondary CTE programming through comprehensive high schools and regional career and technical centers. At the postsecondary level, CTE classes are delivered through community colleges and tribal colleges. North Dakota is currently working towards statewide articulation agreements. However, there is currently in place a dual credit program that allows students to earn high school and college credit simultaneously. There is also a state-facilitated credit transfer system between institutions. North Dakota is representative of many sparsely populated western states: relatively small state budgets and a great deal of localized control. The lack of state-level programming makes it difficult to locate accurate data about specific state curriculum.

## Access Points

The following are opportunities for employers to become involved:

- Content Standards Developed by Industry Representatives
- Local School Career Development Offices
- WBL, Internships, Apprenticeships
- Local School Districts

## Standard Development

North Dakota uses state-wide content standards that are developed by teams of business and industry representatives by industry sector. However, it is unclear how often the standards are updated and whether or not they are able to adapt to meet changes in state market demand. Most technical education efforts within the state focus on the local school level. AED-affiliates should contact their local school boards and become engaged in curriculum development at the local level.



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## ECONOMIC IMPACT

By 2018, 56% of all North Dakota jobs will require some training beyond high school, including 43,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$874 higher median per capita income
- 1,000 fewer unemployed
- 3,600 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACT

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# North Dakota Playbook



## Work-Based Learning

While North Dakota does provide a state-level Operation Intern program, most work-based learning opportunities are formulated at the local level. This may make it more difficult for AED affiliates to locate student workers, but it also incentivizes local employer involvement. The best strategy for AED industry partners is to contact their local school districts about creating work-based learning opportunities.

## Best Practices List

### Aligning Funding to High-Quality Programs

- State funding is currently based on program type with postsecondary funding based on credits earned. While this may serve as one indicator of a high-quality program, there are other factors that should be considered. The state should develop a comprehensive funding scheme that reacts to industry needs.

### Career Services System

- There is state-provided training for career advisors, but no state-wide career services system. However, in a largely rural state like North Dakota, it may be best to focus on local career development rather than implementing a state-wide system.

## Future Developments

While North Dakota's state-wide CTE programs are not extensive, the state is currently working to develop stronger programs. The state education department lays out the current path for developing CTE curriculum as reviewing current national and industry standards and then using a group of teachers and industry representatives to decide if the national standards should be adopted as state standards. North Dakota is also trying different ways to provide financial incentives for CTE participants such as the North Dakota CTE Scholarship.

Now is an excellent time for AED-affiliated industry leaders to join with North Dakota in developing career paths that will both provide needed heavy machinery mechanics and assist in creating an exemplary program that can be implemented in other industry areas. North Dakota is currently targeting manufacturing, energy, agriculture, technology, aviation, and life science industries. AED affiliates fit well within the targeted industries and would be fitting curriculum development partners.

## Additional Resources

- CTE Snapshot:
  - [https://careertech.org/sites/default/files/pictures/NorthDakota\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/NorthDakota_CTESnapshot2015.pdf)
- State Plan:
  - <http://s3.amazonaws.com/PCRN/docs/stateplan/ND5YearStatePlan.pdf>
- State CTE Standards:
  - <http://www.nd.gov/cte/services/standards/>



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# Career and Technical Education

## Nebraska Playbook

### RELEVANT PATHWAYS

Nebraska only offers diesel and heavy equipment technology courses at the postsecondary level, and does not offer agricultural mechanics courses.

### RECENT FUNDING

In both FY2015 and FY2016, Nebraska received \$6,816,893 in Perkins Basic State Grant funding.

### KEY STATE LEGISLATION

Nebraska's reVISION project (2014) received an increase in funding to keep supporting schools working to align CTE programs with labor market needs and state economic priorities.

LB870 (2012) allows any school district that obtains state approval to establish and operate a Career Academy.



## Access Points

- Work-Based Learning: Nebraska Department of Education
- Workforce Development: NEWorks
- Curriculum Development: Nebraska Standards for Career Ready Practice

## Work-Based Learning

Nebraska strongly encourages work-based learning for CTE students, and the state's Department of Education website includes information for schools on contacting employers to set up work-based learning opportunities. Nebraska also offers the Work Experience Career Exploration Program (WECEP), aimed at at-risk 9<sup>th</sup> and 10<sup>th</sup> graders to motivate them to continue their education and provide them with occupational skills through part-time work experience. Other resources available online include brochures with information about legal issues, required forms for setting up work-based learning experiences, and an instruction guide for developing WBL curriculum.

## State Basics

Nebraska delivers CTE at the secondary level through comprehensive high schools and at the postsecondary level through the state community college system. The state is exploring the addition of regional career centers for student and adult learners to obtain extracurricular CTE training, and already provides CTE courses to inmates within the corrections system. Nebraska is currently developing statewide articulation agreements and expanded dual-credit opportunities for secondary students, as well as career academies that integrate academics and CTE and conclude with a dual-credit capstone course. Nebraska is also working on an initiative that will allow secondary school CTE teachers to become certified to teach dual-credit CTE courses at high schools. Nebraska has a substantial skills gap, with 58% of the state's job market consisting of middle-skill jobs, but only 48% of Nebraskans possessing the required skills. By 2018, Nebraska will have 1,198,000 jobs, 57% of which will require more than a high school education, including 112,000 that will require a certificate.



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# Nebraska Playbook



## ECONOMIC IMPACT

If Nebraska increased the number of citizens who held an associate's degree or professional certification by 10 percentage points, the state would have:

-A \$639 increase in median per capita income

-2,800 fewer unemployed individuals

-8,600 fewer people living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## Curriculum Development

Nebraska closely collaborates with business and industry representatives in developing CTE program standards, coordinating work-based learning, and reviewing and updating standards. Specifically, the 2009 Nebraska Summit on Career Readiness included 75 participants, including many representatives from major employers in the state. The summit led directly to the 2011 publication of the Nebraska Standards for Career Ready Practice, which is the basis for determining current CTE standards in Nebraska schools.

## Best Practices List

### Flexibility for Localities

Local districts in Nebraska are responsible for developing CTE programs of study and ensuring they conform to state and industry standards. While institutions have some flexibility in the establishment of CTE programs, schools must offer at least one three-course sequence in the same subject area and align secondary curriculum to postsecondary course offerings.

### Career Services: Awareness & Outreach

Nebraska recently began a marketing campaign to raise awareness of the benefits of CTE among students and parents.

### Academic Integration

Nebraska recently amended its CTE program of study models to include alignment to traditional coursework, and legislation passed in 2012 allows any local school district to establish a career academy that integrates academics and CTE around an occupational theme.

## Workforce Development

Nebraska's Department of Labor operates the NEWorks website, which offers services for both job seekers and employers. Resources for prospective employees include a job search database, a resume creation portal, education and training opportunities, physical career center locations, and labor market information. Resources for employers include information on hiring incentives, a portal for posting job openings, and a searchable database of job seekers. The website also contains employer-relevant information on the state labor market and education and training opportunities. This includes a tracker for the number of students completing different training and education, a list of ETPL approved programs that are eligible for WIOA (Workforce Investment and Opportunity Act) funding, and information on Equal Employment Opportunities and labor relations.

## Additional Resources

- Nebraska work-based learning: <https://www.education.ne.gov/wbl/About%20WBL.html>
- NEWorks: <https://neworks.nebraska.gov/vosnet/Default.aspx>
- Summary of the 2009 Nebraska Summit on Career Readiness: <http://ne-career-readiness.com>
- Nebraska Standards for Career Ready Practice: <https://www.education.ne.gov/nce/documents/2012CareerReadinessBookletWEB.pdf>



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# Career and Technical Education

## New Hampshire Playbook

### RELEVANT PROGRAMS

CTE programs are independently developed at the various CTE Regional Centers; all programs (of the same program area) are centered on a state-developed set of competencies. Some relevant programs include:

- Heavy Equipment Maintenance and Repair (Secondary)
- Automotive Mechanics Technician (Secondary)
- Agricultural Mechanization

The postsecondary level includes course offerings in Automotive Technology and a Aviation Technology Helicopter program.

### RECENT FUNDING

New Hampshire received an estimated \$5,488,705 in Perkins Basic State Grant funds in FY2015 and an estimated \$5,496,906 in FY2016.

### KEY DOCUMENTS

- *CTE Program Advisory Committee Handbook*
- *New Program Application*



### State Basics

New Hampshire delivers CTE at the secondary level through regional career and technical education centers, while the Community College System of New Hampshire (CCSNH) and the University of New Hampshire's Thompson School of Applied Science (TSAS) offer CTE at the postsecondary level. According to ACTE, New Hampshire achieves academic integration by requiring "competencies for new or updated programs [to align] with national, state and local standards, including academic standards." Furthermore, professional development encourages academic integration into CTE courses through participation in the Math-in-CTE professional development model. The development of new secondary CTE programs requires secondary-postsecondary connections, and the state continues to develop statewide articulation agreements to complement existing agreements and dual enrollment opportunities. Professional development within the state also encourages the development of articulation agreements and is guided overall by a 5-year professional development master plan.

### Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Program Advisory Committee
- CTE Program Advocacy
- WBL, Internships, Apprenticeships

### Program Advisory Committee

New Hampshire requires CTE providers to develop and maintain program advisory committees for each CTE program. The state encourages business and industry participation to help "strengthen collaboration between those responsible for CTE programs and the communities they serve" (*CTE Program Advisory Committee Handbook*). Many schools establish term limits for committee membership to facilitate new ideas, so the members of business and industry who are initially unable to access PACs should stay vigilant in their efforts to join. When a school initiates the creation of a new program, the PAC is required to meet at least twice in order to assist in development. Once the program is operational, the PAC plays an integral role in maintaining the efficacy of CTE delivery. The *CTE Program Advisory Committee Handbook* outlines the key roles played by members of the PAC (continued on back).



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# New Hampshire Playbook



## PAC (Continued)

Key roles of the PAC include advisement, assistance, and advocacy. The PAC is responsible for assessing the CTE program and suggesting improvements to key areas, including but not limited to curriculum, facilities, budgets, student competencies, and equipment. Members of the PAC also assist instructors in the delivery of CTE. They are encouraged to help identify and develop work-based learning opportunities to expand upon the classroom experience. Finally, PAC members play a key role in program advocacy. This includes identifying other members of the community that can serve an integral part in the development and maintenance of the CTE program. It also involves a broader commitment to CTE in its entirety. The key federal CTE legislation, the *Carl D. Perkins Career and Technical Education Act of 2006*, has been up for reauthorization since 2013. Members (and non-members) of the PAC should contact their representatives to encourage a federal commitment to CTE. Overall, the PAC represents an excellent opportunity for members of business and industry to directly contribute to the existence and content of CTE programs.

## CTE Program Advocacy

As previously mentioned, CTE programs are developed independently at the school-level (with state guidance). Members of business and industry should coordinate with their local school district to explore current opportunities for students. Where relevant CTE opportunities do not already exist, advocates should coordinate with the school superintendent and advocate for the development of a new program. Advocates should be prepared to discuss local need and employment opportunities. More information regarding decision criteria can be found in the *New Program Application* documentation located on the state education department's website.

## Work-Based Learning and Professional Development

Members of business and industry are encouraged to participate in work-based learning opportunities, including internships and apprenticeships. Employers should consult their local CTE providers to explore opportunities to develop such opportunities. Furthermore, they should consult state and federal child labor guidelines, including the US Department of Labor Child Labor Bulletin 101 (*Child Labor Provisions for Nonagricultural Occupations Under the Fair Labor Standards Act*) and Child Labor Bulletin 102 (*Child Labor Requirements In Agricultural Occupations Under the Fair Labor Standards Act*) in order to ensure compliance with child labor law.

As previously mentioned, the PAC plays an integral role in identifying work-based learning opportunities for students. Members of business and industry not currently serving on a PAC should still contact their local program's PAC and discuss involvement in work-based learning opportunities. Finally, businesses may offer teachers opportunities to continue their professional development through additional training; this helps ensure that students are being taught the most current industry practices.

## Additional Resources

- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- AdvanceCTE State Profile
  - <https://www.careertech.org/New-Hampshire>
- New Program Application Documentation
  - [http://education.nh.gov/career/career/cte\\_programs.htm#newprog](http://education.nh.gov/career/career/cte_programs.htm#newprog)
- CTE Program Advisory Committee Handbook
  - [http://education.nh.gov/career/career/documents/pac\\_handbook.pdf](http://education.nh.gov/career/career/documents/pac_handbook.pdf)



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## ECONOMIC IMPACT

Per AdvanceCTE, "middle-skill jobs account for 54 percent of New Hampshire's labor market, but only 43 percent of workers in New Hampshire possess the required skills" (National Skills Coalition).

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 3,300 fewer unemployed individuals
- 5,700 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Career and Technical Education

## New Jersey Playbook



### RELEVANT PATHWAYS

New Jersey's CTE programs are aligned to the Career Clusters framework. It has relevant pathways in automotive tech, welding, construction, and agricultural technology and machinery.

### RECENT FUNDING

New Jersey received an estimated \$22,297,295 in Perkins Basic State Grant funds in FY2015 and an estimated \$22,444,922 in FY2016

### KEY STATE DOCUMENTS

- The Job Shadowing Handbook details the goals and techniques to establish an effective Job Shadowing program that engages students, educators, and potential employers.
- The Apprenticeship to College Credit Handbook provides guidelines to apprentice facilitators of the evaluation process associated with credit articulation.
- The Pathways and Partnerships: New Jersey's Blueprint for Talent Development (Blueprint) acts a guide New Jersey's implementation of the Workforce Innovation and Opportunity Act (WIOA).

## State Basics

In New Jersey, secondary level CTE is administered by comprehensive high schools, and partially through county vocational-technical schools that also provide postsecondary and adult education. At the postsecondary level CTE is administered by state community colleges and by county vocational-technical schools. Because of state requirements all secondary school districts are required to develop Programs of Study and articulation agreements with postsecondary institutions on an annual basis. The Early College High School Initiative also allows students to work towards college credits while still in high school. The Career and Technical Education Partnership of New Jersey through the Office of Career and Technical Education (OCTE) offers resources for professional development such as workshops, webinars, and conferences throughout the year. The Career and Technical Association of New Jersey (ACTE) also provides development opportunities with the annual New Jersey Statewide CTE Conference co-hosted by the OCTE. New Jersey's CTE Alternate Route Teacher Program also allows for non-educational background educators with industry experience to gain the necessary credentials to teach in New Jersey CTE programs.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- New Jersey Schools-to-Careers Partnership Job Shadowing
- New Jersey Employer Coalition for Technical Education
- New Jersey Pathways Leading Apprentices to a College Education (NJ PLACE)
- New Jersey Community College Consortium

## New Jersey Schools-to-Careers Partnership Job Shadowing

This program is offered as early as fifth grade, utilizes partnerships made with New Jersey schools and private employers to raise awareness to students of the employment opportunities in CTE fields. Additionally, job shadowing allows educators practical development workplace awareness, and skills in students with an emphasis on safety in the workplace to prepare them for entrance into the workforce. By making connections with industry businesses, educators can also establish mechanism to receive input on CTE coursework and the specific needs of the local community. Employers can also utilize this connection with schools to engage in skill development and recruitment of graduating students.



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## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 53 percent of New Jersey’s labor market, but only 38 percent of workers in New Jersey possess the required skills.”

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 16,500 fewer unemployed individuals
- 48,600 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# New Jersey Playbook



## New Jersey Pathways Leading Apprentices to a College Education

New Jersey Pathways Leading Apprentices to a College Education (NJ PLACE) is a statewide initiative that facilitates apprenticeships that students can then use towards achieving a college degree at 1 of New Jersey’s 19 community colleges. Additionally after a 2010 legislative initiative, participants can now also now apply earned credit towards a degree at any of the state’s 4 year colleges or universities. By providing educational credit that can be applied towards a college degree, NJ PLACE encourages individuals to pursue a degree in higher education who may not have in absence of the program. Additional certification programs are available to apprentices to facilitate professional credentialing of participants. With liaisons to New Jersey’s community colleges, employers can utilize NJ PLACE as an opportunity to recruit and develop employees.

## New Jersey Employer Coalition for Technical Education

Created as a joint effort between the New Jersey Business & Industry Association and the New Jersey Council of County Vocational-Technical Schools, this coalition comprised of individual businesses like BMW and business associations such as the New Jersey Utilities Association. Together these members work to raise awareness of state vocational programs, while emphasizing the importance of maintaining adequate funding in order to facilitate the need of communities.

## New Jersey Community College Consortium

Established in 2004, The New Jersey Community College Consortium for Workforce & Economic Development has made its effort to work towards closing the skills gap. The consortium is partnered with all of New Jersey’s community colleges, businesses, and associations such as the New Jersey Business & Industry Association (NJBIA), and others. Together the consortium offers training programs to both workers and to employers who can apply for grants to help defray the costs of training. Training programs offer a wide number of skills sets and are flexible for a large range of industries and businesses. Membership to the consortium also allows local industries to collaborate with community colleges to develop specific curriculum to address local needs.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/New-Jersey>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Blueprint
  - <http://www.njsetc.net/njsetc/planning/unified/documents/NJ%20Blueprint%20for%20Talent%20Development.pdf>
- Job Shadowing Handbook
  - <http://www.nj.gov/education/cte/sle/JobShadowingHandbook.pdf>
- Apprenticeship to College Credit Handbook
  - [http://www.njplace.com/sites/default/files/pdfs/Apprenticeship%20to%20College%20Credit%20Handbook\\_NJ%20PLACE.pdf](http://www.njplace.com/sites/default/files/pdfs/Apprenticeship%20to%20College%20Credit%20Handbook_NJ%20PLACE.pdf)
- NJ PLACE
  - <http://njplace.com/>
- NJ Employer Coalition for Technical Education
  - <http://www.careertechnj.org/nj-employer-coalition-for-technical-education/>
- New Jersey Community College Consortium
  - <http://njworkforce.org/>



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# Career and Technical Education

## New Mexico Playbook

### RELEVANT PATHWAYS

New Mexico has aligned to the Career Clusters framework, and is in the process of developing programs that directly impact the state's economy. Currently the state does not offer any programming at the secondary level that targets the specific needs of AED and its members.

### RECENT FUNDING

New Mexico received an estimated \$8,080,607 in Perkins Basic State Grant funds in FY2015 and an estimated \$8,017,422 in FY2016

### KEY STATE DOCUMENTS

- The New Mexico Jobs Council's 2014 Report is the key report of the efforts conducted by the Jobs Council to identify priority employment sectors to target CTE programming towards.
- HB178 (2015) This recent legislation effort amends the state's public school code to allow the awarding of elective credit to secondary students for CTE and pre-apprenticeship programs. This effort is a part of a larger state reform to further engage students in CTE.



### State Basics

New Mexico delivers CTE at the secondary level via comprehensive high schools, as well as through early college high schools, workforce readiness programs, and charter schools. At the postsecondary level CTE is delivered through the state's community and 4-year colleges. Through initiatives such as the Next Step Plan and the states Early College High Schools, students are able to earn college credit for specific courses taken in high school. Additionally, dual enrollment is available across the state and credits easily transfer to any of New Mexico's state schools. Professional development is coordinated by Local Education Agencies (LEAs), which utilize the New Mexico Professional Development Framework to help CTE administrators and educators, school counselors, and other professionals to develop integrative curriculum, implement career pathways and Programs of Study, and implement industry standards and practices into curricula. Development is also available through New Mexico ACTE and its annual development conference. Because of the lack of secondary level CTE curriculum in AED relevant fields, efforts should be focused on the Public Education Department (PED), College and Career Readiness Bureau (CCRB), to emphasize the importance of mechanical and technical CTE programming in addition to vocational programs.

### Access Points

The following are opportunities for employers to become involved. Additionally, methods of implementing AED relevant pathways are also included. Each access point is further explored throughout the rest of this document:

- Job Training Incentive Program (JTIP)
- Workforce Solutions and Apprenticeship Program

### Job Training Incentive Program (JTIP)

Administered by the New Mexico Economic Development Department as a part of the department's' Programs for Business, this program provides temporary funding of in class room and on the job training (OJT) to employees of qualifying businesses. Trainees must be state residents who have completed their high school diploma or GED and are not currently employed. OJT programs must be administered by the employer, who also must provide all necessary training resources, although partial reimbursement of trainees' wages is available to help defray costs. Classroom training is provided by New Mexico's public postsecondary institutions, and instruction is funded for trainees by JTIP. Employers may also utilize classroom training for current employees, however, reimbursement is only available for costs associated with trainees, not current



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# New Mexico Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 51 percent of New Mexico’s labor market, but only 46 percent of workers in New Mexico possess the required skills.”

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 4,200 fewer unemployed individuals
- 14,500 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## State Department of Workforce Solutions

This state department offers a number of resources to both employers and employees alike. Employers can utilize the department's job postings as well as the Apprenticeship program that utilizes and earn as you learn model to provide on the job (OJT) and classroom training to highly motivated job-seekers.

## AED Relevant Pathway Implementation

Due to the lack of pathways relevant to AED and AED partners, this section analyzes the CTE curriculum development process and identifies opportunities for businesses to pursue further development of these pathways. According to a memo from the CCRB Director, the current 7 pathways are a result of the identification of priority employment sectors by the New Mexico Department of Workforce Solutions and the New Mexico Jobs Council. After identifying these sectors, subsequent meetings with stakeholders were conducted and curriculum was developed. The sector identification process was largely conducted by the Jobs Council of the state legislature, which is comprised primarily of legislators, but also members of the public. This role of identifying priority sectors to be targeted by educational reforms makes the Jobs Council a key target in lobbying efforts of local and state businesses wishing to implement technical and mechanical CTE into state curricula. For postsecondary CTE implementations businesses can target efforts towards the Higher Education Department or towards individual local colleges to address specific local community needs.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/New-Mexico>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- New Mexico ACTE
  - <http://www.nmacte.com/>
- NMPED's Current CTE Overview
  - [http://www.ped.state.nm.us/ped/CCR\\_perkins.html](http://www.ped.state.nm.us/ped/CCR_perkins.html)
- New Mexico Public Education Commission
  - <http://ped.state.nm.us/ped/PECIndex.html>
- New Mexico Department of Workforce Solutions
  - <https://www.dws.state.nm.us/Home>
- New Mexico Jobs Council
  - [https://www.nmlegis.gov/Committee/Interim\\_Committee?CommitteeCode=JOBS](https://www.nmlegis.gov/Committee/Interim_Committee?CommitteeCode=JOBS)
- New Mexico Jobs Council's 2014 Report
  - <https://www.nmlegis.gov/lcs/fileExists/internreports/JOBS13.pdf>
- New Mexico Economic Development Department's Business Resource Center
  - <https://gonm.biz/business-resource-center/>
- Job Training Incentive Program
  - <https://gonm.biz/business-resource-center/edd-programs-for-business/job-training-incentive-program/>
- Higher Education Institution Dashboard
  - <http://nmhedss2.state.nm.us/DashBoard/index.aspx>



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# Career and Technical Education

## Nevada Playbook



### RELEVANT PATHWAYS

Nevada has adopted the Career Clusters framework, into six career fields. It has relevant pathways in agricultural technology and machinery, automotive technicians, welding, and fabrication.

### RECENT FUNDING

Nevada received an estimated \$9,720,272 in Perkins Basic State Grant funds in FY2015 and an estimated \$9,827,913 in FY2016

### KEY STATE DOCUMENTS

- The Quality Program Standards establish program standards within CTE programs to ensure effective utilization of programming.
- Policy and Guidance Handbook for Secondary and Postsecondary Education provides guidance to school districts, charter schools, and colleges to fulfill statutory and regulatory committee requirements.
- SB238 (2013) created specific stipulations of allocations of state CTE funds:
  - Up to 7.5% for leadership
  - Up to 5% for CTSOs
  - Up to 30% for competitive grants

The remainder must be allocated to school districts.

### State Basics

Nevada delivers CTE at the secondary level via comprehensive high schools and career and technical academies. The state's Community College System delivers CTE to the postsecondary level. The newly developed CTE College Credit Program has colleges develop statewide articulation agreements for each CTE program, and students may also take dual enrollment courses to earn up to 21 college credits while in high school. Nevada emphasizes professional development efforts by local education agencies (LEAs) to allow for local needs to be addressed by educators. Development stresses academic integration and implementation of industry and occupational standards into CTE curricula. Professional development is also facilitated by Nevada ACTE, with a number of seminars and workshops throughout the year in addition to other resources. Special licensure agreements also allow for non-education background educators to obtain necessary instructional credentials in order to bring their relevant industry experience to the class room. Nevada has also been making redevelopment efforts by further developing Career and Technical Academies using a magnate school structure. These efforts are most notable in Clark County (Las Vegas) and Washoe County (Reno).

### Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- NSHE's Community College Committee
- Advisory Technical Skills Committees
- Career and Technical Education Councils

### NSHE's Community College Committee

The Nevada System of Higher Education (NSHE) is controlled by the Board of Regents which has several committee that advise the board to the on specific issues faced by the board. At the discretion of the board, these committees can be opened to members of the public who serve as advisors to the committee. Of interest is the Community College Committee which addresses operations and programs of community colleges as well as workforce development among students. Engagement with this committee would allow businesses to directly give input to the CTE courses available at Nevada's community colleges. Additionally, industries can coordinate with the committee to better implement professional credentialing programs offered at community colleges.



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# Nevada Playbook



## Advisory Technical Skills Committees

Nevada Revised Statutes (NRS) and Nevada Administrative Code (NAC) create advisory committee requirements of school districts, colleges, and charter schools. These committees, in addition to advisory committee provisions within the Perkins Act, create multiple committees that advise CTE programs. Of interest is the School District Advisory Technical Skills Committee required under NRS 388.385. These committees are comprised of business and industry representatives, CTE educators, CTE students, and representatives of postsecondary institutions that provide CTE courses. Together committee members review CTE curriculum content and effectiveness, provide any recommendations to the school board, and facilitate work based learning experiences for current CTE students. These committees provide strong opportunities for local businesses to express specific workforce needs. Additionally, businesses can use committees to establish strong linkages with local students and families, which can later be utilized for recruitment.

## Career and Technical Education Councils

NRS 388.385 also calls for the establishment of Career and Technical Education Councils in school districts with populations greater than 35,000 or districts with a college campus. These councils are composed similarly to Advisory Technical Skills Committees, but with some additional functions. Councils specifically look to align CTE between the secondary and postsecondary levels and provide for pathways to from school to careers.

### ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 51 percent of Nevada’s labor market, but only 49 percent of workers in Nevada possess the required skills.”

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 5,600 fewer unemployed individuals
- 14,700 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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#### Rick Trachok

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#### Andrea Anderson,

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## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Nevada>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Nevada ACTE
  - <http://www.nacteonline.org/>
- State CTE Guidelines
  - <http://www.doe.nv.gov/CTE/Standards>
- Nevada DOE Quality Standards
  - <http://www.doe.nv.gov/uploadedFiles/nded/oenvgov/content/CTE/Documents/Quality-Program-Standards.pdf>
- Board of Regents Community College Committee
  - <http://system.nevada.edu/Nshe/index.cfm/administration/board-of-regents/current-regents1/dr-andrea-anderson/>
- Policy and Guidance Handbook for Secondary and Postsecondary Education
  - [www.doe.nv.gov/WorkArea/DownloadAsset.aspx?id=127664](http://www.doe.nv.gov/WorkArea/DownloadAsset.aspx?id=127664)



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# Career and Technical Education

## New York Playbook

### RELEVANT PATHWAYS

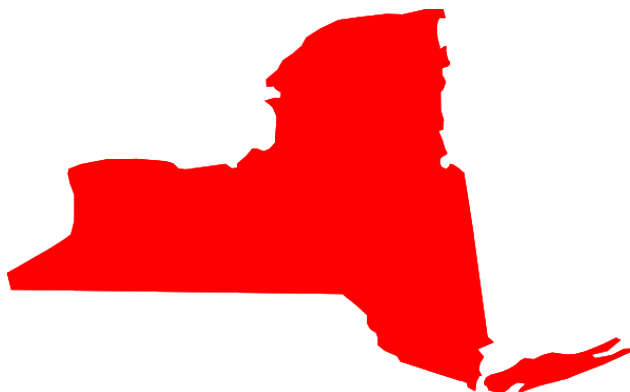
New York's Trade and Technical Education Major includes a Transportation area. Within this focus, students can specialize in Heavy Equipment Operations and Repair as well as Aviation Operations and Repair.

### RECENT FUNDING

New York received an estimated \$51,361,536 in Perkins Basic State Grant funds in FY and FY 2016.

### KEY STATE DOCUMENTS

- The New York State *Implementation Guide for CTE Program Approval* (Implementation Guide) provides the detailed provisions of the Regents 2001 Policy on CTE. It outlines the requirements for approval of a CTE program, including provisions for the participation of members of business and industry in the program approval process.
- *Work Experience Manual: March 2013 Update*



## State Basics

CTE in New York is delivered at the secondary level through comprehensive high schools, CTE-specific high schools, and career academies. At the postsecondary level, students can find CTE opportunities through New York's various state college systems as well as private and for-profit schools. New York has integrated traditional academics into CTE curriculums using multiple strategies; career academies integrate academics and CTE, while ACTE finds that "completion of the Regents CTE Approval Process allows programs to offer credit for integrated academic content within CTE programs." New York requires a CTE program to demonstrate articulation to a postsecondary CTE provider in order to gain approval. According to the *Implementation Guide for CTE Program Approval*, "articulation agreements may include several school districts and/or BOCES and multiple postsecondary institutions. As of the 2009-2010 CAR narrative, there was not a statewide policy on dual credit or enrollment. Finally, New York has focused professional development resources to help teachers integrate academics into the delivery of CTE. The professional development process includes outside stakeholders such as New York State ACTE as well as state-contracted resources such as the CTE Technical Assistance Center of NY.

## Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Program-Approval Self-Study Team
- External Review Committee
- Work-Based Learning Opportunities

## Program Approval Self-Study Team

According to the *Implementation Guide*, "self-study is the first step in the career and technical education approval process [and] is required for all existing programs and new programs seeking approval." Though not required, members of business and industry can participate in the self-study and help to shape the development of a CTE program. Specifically, the Self-Study Team conducts a review of the following areas: curriculum, teacher certification and training for CTE instructors, selection of a program technical assessment, postsecondary articulation agreements, and opportunities for work-based learning. The school district or BOCES determines the members of the self-study team, so it is imperative to make connections with local education providers to gain access to the opportunity to shape CTE delivery.



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# New York Playbook



## External Review Committee

The External Review Committee is “formed to review, address, and approve the self-study report.” According to the *Implementation Guide*, it must include members of business and industry; at a minimum, there must be two representatives from the business and industry of the career area under review. The *Implementaiton Guide* states, “The external review committee will review the self-study report, identify deficiencies and needs of the program, and recommend improvements to the self-study team prior to submission to the superintendent of schools or the district superintendent for board of education action. The external committee may also recommend that the program is without deficiencies and should be directly forwarded to the superintendent of schools or the superintendent for board of education action.” Not only does the External Review Committee represent a great opportunity for members of business and industry to shape CTE delivery in and of itself, but it also allows for members of business and industry to build in redundancies throughout the program approval process. Specifically, when members of business and industry are unsuccessful at lobbying for provisions of a program at the self-study stage, the External Review Committee presents another opportunity to push for key aspects of a program. This necessitates, however, that local members of business and industry maintain communication channels regarding the most important aspects of a CTE program.

## Work-Based Learning

New York offers several work-based learning programs. These include:

- Career Exploration Internship Program (CEIP)
  - “CEIP is a school-business partnership initiative that provides high school students, age 14 and above, the opportunity to obtain non-paid, on-site, career exploration experiences. Students may earn  $\frac{1}{4}$  to 1 unit of elective or CTE sequence credit.”
- Cooperative Career and Technical Education Work Experience Program (CO-OP)
  - “CO-OP is a work-based learning program for students age 16 and above, consisting of 150 to 600 hours of paid, school-supervised work experience, supported by related in-school instruction in a specific career and technical discipline. Students may earn  $\frac{1}{2}$  to 2 units of credit towards a CTE sequence, depending upon the specific sequence.”
- General Education Work Experience Program (GEWEP)
  - “A work-based learning option for non-CTE students, age 16 and above.”
- Work Experience and Career Exploration Program (WECEP)
  - “Similar in design and operation as GEWEP, but designed specifically for at-risk students age 14-15.”

## Additional Resources

- *Regents Policy, Program Approval Process*
  - <http://www.p12.nysed.gov/cte/ctepolicy/ctepolicy.html>
- *Implementation Guide for CTE Program Approval*
  - <http://www.p12.nysed.gov/cte/ctepolicy/guide.html>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- AdvanceCTE State Profile
  - <https://www.careertech.org/New-York>



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### ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 51 percent of New York’s labor market, but only 39 percent of workers in New York possess the required skills” (National Skills Coalition). A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 27,700 fewer unemployed individuals
- 136,600 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

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# Career and Technical Education

## Ohio Playbook



### RELEVANT PATHWAYS

Heavy Equipment Operator Pathway within the Construction Technologies Career Field

The state needs to develop an Equipment Maintenance program

### RECENT FUNDING

- \$42,750,001 Perkins
- State funding is based on student enrollment with additional funding provided to fields with the highest employment need
- Performance-based funding for community colleges

### KEY STATE LEGISLATION

- HB 59: Provides additional funding for fields with high employment need
- Ohio Competency Articulation Sequencing Tool
- Early College High School Initiative
- Ohio Career-Technical Credit Transfer Initiative

## State Basics

Ohio provides a great example of exemplary state CTE programs. The CTE coursework is fully integrated with standard high school coursework. At the secondary level, CTE is delivered through comprehensive high schools and CTE centers, as well as STEM schools. Career-Technical Planning Districts (CTPDs) provide for career and technical education for both secondary and adult students. Within the CTPDs are Joint Vocational School Districts (JVSDs) and Comprehensive/Compact School Districts that offer CTE programs that meet both state and federal requirements. At the postsecondary level, CTE is delivered through state colleges, Ohio Technical Centers, and Adult Basic and Literacy Education (ABLE) sites. The design and flexibility of Ohio CTE programs should be implemented in other states.

## Access Points

The following are opportunities for employers to become involved:

- State Career Pathway Development
- Work-based Learning, Internships, Apprenticeships
- Career-Technical Planning Districts
- Joint Vocational School Districts

## Local Programs of Study

Secondary CTE programs must comply with state-approved Programs of Study (POS) that span grades 9-14. Templates are provided to local schools and the state offers technical assistance in developing a local POS that meets local market demands while adhering to the overall state academic standards. AED-affiliates should ensure that state POS's are tailored to meet company-specific demand within the local area.



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## ECONOMIC IMPACT

By 2018, 58% of all Ohio jobs will require some training beyond high school, including 593,000 requiring certificates

A 10% increase in the number of certificates or associate degrees will create:

- \$956 higher median per capita income
- 41,100 fewer unemployed
- 77,800 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Ohio Playbook



## Career Services System

Ohio operates an excellent state-wide online system on [OhioMeansJobs.com](http://OhioMeansJobs.com). The website can be accessed by both students and industry leaders. There are sections that promote in-demand careers and provide career pathways to obtain positions in related fields. A K-12 program allows students to explore career options and create a plan to develop useful skills and achieve the necessary certification.

## Best Practices List

### Secondary/Postsecondary Alignment

- State career pathways and statewide credit transfer programs work to align the curriculum and training within secondary and postsecondary programs.

### Intermediaries to Coordinate Work-Based Learning

- The state online career system coordinates learning opportunities between students and employers. The state also provides a directory for students to use in locating opportunities within their own areas of interest.

# State Funding Scheme

Ohio provides foundational aid for each CTE student Full-Time Equivalency (FTE). In addition to this funding, HB59 provides funding for students based on the availability of Ohio jobs. Five different categories are used in this analysis:

- **Category 1:** Career fields with immediate employment need: Agriculture and Environmental Systems, Construction Technologies, Engineering and Science Technologies, Finance, Health Science, Information Technology and Manufacturing Technologies (highest funding level)
- **Category 2:** Business Administration, Hospitality and Tourism, Human Services, Law and Public Safety, Transportation Systems and Arts and Communications
- **Category 3:** Career-Based Intervention Programs
- **Category 4:** Education and Training, Marketing, Public Administration, Career Development and workforce development in academics
- **Category 5:** Family and Consumer Science programs (lowest funding level)

## Additional Resources

- CTE Snapshot:
  - [https://careertech.org/sites/default/files/pictures/Ohio\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Ohio_CTESnapshot2015.pdf)
- Ohio 2010 CAR:
  - [http://s3.amazonaws.com/PCRN/docs/CARNarrative/OH\\_2009\\_2010\\_Narrative.pdf](http://s3.amazonaws.com/PCRN/docs/CARNarrative/OH_2009_2010_Narrative.pdf)
- Construction Technologies Standards:
  - <https://education.ohio.gov/getattachment/Topics/Career-Tech/Construction-Technologies-Career-Field/Construction-Technologies-Standards-pdf.pdf.aspx>



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# Career and Technical Education

## Oklahoma Playbook



### RELEVANT PATHWAYS

Oklahoma offers programs in diesel technology and heavy equipment repair, but programs are designed at the institutional level and not the state level.

### RECENT FUNDING

In both FY2015 and FY2016, Oklahoma received \$15,094,180 in Perkins State Basic Grant funding.

### KEY STATE LEGISLATION

SB1653 (2014) expands eligibility for CTE courses at state CTE centers to sophomores, among other provisions.

In 2011, Governor Fallin introduced a goal to increase the number of Oklahomans with college degrees to 67% by 2023, including 1,700 more career certificates awarded per year.

### Access Points

- Work-based learning: Oklahoma Career Tech
- Workforce Development: Oklahoma Works
- Curriculum Development: OK CareerTech Curriculum Instruction and Materials Center

### State Basics

CTE in Oklahoma is delivered at the secondary level through comprehensive high schools and secondary schools (grades 6-12), technology centers that provide extracurricular training to high school students, and skills centers for juvenile offenders. At the postsecondary level, CTE is delivered through the 29 Technology Center Districts, which administer CTE on 58 campuses, as well as through skill centers for adult offenders in the corrections system. Oklahoma uses a Cooperative Alliance system to develop articulation agreements between Technology Center Districts and area secondary and postsecondary institutions. Secondary students can work towards an associate's degree by taking courses at colleges and technical centers, and postsecondary institutions may consider knowledge and skills obtained outside the academic classroom for college credit. Oklahoma has a significant skills gap, as 57% of jobs in the state are middle-skill jobs, but only 48% of workers possess the required skills. By 2018, Oklahoma will have 1,866,700 jobs, of which 59% will require some postsecondary training including 196,000 that will require certificates.

### Work-Based Learning

Work-based learning in Oklahoma is managed at the institutional level, with individual secondary and postsecondary institutions developing their own work-based learning courses in conjunction with local businesses. WBL is a regular component of instruction at Oklahoma's 58 Technology Centers, which are the primary means of delivering CTE at the secondary and postsecondary level in Oklahoma. Each of the 58 Technology centers maintains its own partnerships with businesses and unique career pathway opportunities. A full directory of Technology Centers, including contact information, is available at the Oklahoma CareerTech Website (see the Additional Resources section on the reverse side).



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## ECONOMIC IMPACT

If Oklahoma increases the share of its population holding an associate's degree or professional certification by 10 percentage points, the state would have:

-A \$932 increase in median per capita income

-6,700 fewer unemployed individuals

-26,400 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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### Oklahoma Department of Career and Technology Education

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# Oklahoma Playbook



## Curriculum Development

Oklahoma's CTE curriculum standards are developed by the Curriculum Instruction and Materials Center, a division of the Oklahoma Department of Career and Technology Education (OK CareerTech). The standards were developed with input from industry groups and trade associations, and secondary and postsecondary institutions, businesses, area Technology Centers, and government agencies use CIMC products to develop course and job training curriculum. In addition to overall standards, CIMC offers curriculum for numerous career pathways for use by schools and training centers.

## Best Practices List

### Academic Integration

All CTE programs are required to align to state and national academic standards at the secondary level, and Oklahoma participates in several initiatives to enhance the integration of academics and CTE, including the High Schools That Work and Technology Centers That Work programs and Project Lead the Way (STEM integration).

### Local Flexibility

Localities wishing to create a new CTE program of study ("Career Major") must submit it to the state for approval. All new secondary programs must contain individual academic plans for students to continue their education that are updated annually, and the state maintains a list of approved local programs of study.

## Workforce Development

Oklahoma offers numerous workforce development resources through the Oklahoma Works website. For job seekers, the site offers job search assistance, listings of job fairs, a state map of workforce centers, job training opportunities, career and college planning, links to degree completion programs, information about apprenticeships, an online career guide, and information on the ACT National Career Readiness Certificate Program. For employers, the site offers a portal for posting vacancies and browsing resumes via OKJobMatch, the OK Higher Ed Connect program that connects businesses and local postsecondary educational institutions for partnerships, workforce development and training tools for businesses via Oklahoma CareerTech, and information on labor laws and tax and training incentives. Finally, Oklahoma Works contains information on statewide labor market trends and special programs, including programs for disabled workers and training programs for inmates in the corrections system.

## Additional Resources

- Work-based learning capstone course at Tulsa Technology Center:  
<http://tulsatech.edu/CourseSyllabi/Workbased%20Learning%20Capstone-OJT.pdf>
- Oklahoma Career Tech directory of Technology Centers:  
<https://www.okcareertech.org/technology-centers/state-map>
- Oklahoma Works:  
<http://oklahomaworks.gov>
- OKJobMatch:  
<https://okjobmatch.com/ada/r/>
- OK Higher Ed Connect:  
<http://www.okhighered.org/econ-dev/business-services/>
- Oklahoma CIMC:  
<http://www.okcareertech.org/educators/cimc>



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# Career and Technical Education

## Oregon Playbook



### RELEVANT PATHWAYS

Oregon offers numerous pathways in diesel technology and heavy equipment operation, but the specifics of each vary from school to school.

### RECENT FUNDING

Oregon received \$13,518,483 in Perkins Basic State Grant funding in FY2015 and \$13,541,476 in FY2016.

### KEY STATE LEGISLATION

SB81 (2015) established the Oregon Promise initiative to provide community college scholarships to Oregon residents.

HB4058 (2014) sets the goal that by 2025, 40% of Oregonians will have a Bachelor's Degree, 40% will have an Associate's Degree, professional certificate or apprenticeship, and 20% will have high school diploma or equivalent.

## State Basics

CTE in Oregon is offered at the secondary level through comprehensive high schools and at the postsecondary level through 17 community colleges offering 654 different CTE programs of study. The Oregon Department of Education also collaborates with other state agencies to offer CTE programs through the Corrections System and the Oregon School of the Deaf. Oregon offers dual-enrollment CTE courses throughout the state, but the details of each articulation agreement are determined by the postsecondary institution. Additionally, the Expanded Options program helps 11<sup>th</sup> and 12<sup>th</sup> grade students find alternative means of completing their education, gain early entry into postsecondary education, and earn concurrent high school and college credits. Oregon has a skills gap, as 51% of the jobs in the state are middle-skill, but only 47% of workers possess the required skills. By 2018, Oregon will have 2,039,900 jobs, of which 59% will require more than a high school degree and 92,000 will require certificates.

## Access Points

- Work-based learning: Oregon Department of Education
- Workforce Development: Oregon Office of Community Colleges & Workforce Development (CCWD)
- Curriculum Development: Oregon Department of Education CTE Content & Standards

## Work-Based Learning

Oregon offers several forms of work-based learning, including internships, apprenticeships, cooperative work experiences, internships, on-the-job-training, and clinical practicums. The Oregon Department of Education website includes resources for creating internship and work-based learning programs, a Cooperative Work Experience Handbook, a link to resources for developing and scaling up work-based learning via Jobs for the Future, and links to work-based learning resources from other states, including California and Tennessee. The site also offers information on state and federal labor laws and child labor policies, as well as links to the Oregon Career Information System (CIS) and information on apprenticeships.



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## ECONOMIC IMPACT

If Oregon increased the share of its population holding an associate's degree or professional certification by 10 percentage points, the state would have:

- An \$867 higher median per capita income
- 8,700 fewer unemployed individuals
- 24,100 fewer people living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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### Ron Dodge

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# Oregon Playbook



## Curriculum Development

Oregon CTE state standards are developed with the input of advisory committees, including stakeholders from business and industry. Oregon's Department of Education Website includes information on current state standards, including academic integration requirements, skill sets, and alignment standards. Further, Oregon requires all localities to have a local advisory committee for CTE curriculum and the website includes information on how to start or join a local advisory committee under the subsection "Content and Standards".

## Best Practices List

### Local Flexibility

Local secondary and postsecondary institutions develop CTE programs of study, which are approved by the Oregon Department of Education. The state evaluates programs using a four part rubric: Content & Standards, Alignment & Articulation, Accountability & Assessment, and Student Report Services.

### Academic Integration

Oregon focuses heavily on the integration of CTE and traditional academics. All CTE programs of study must be crosswalked to the academic standards set in the Oregon Diploma Essential Skills. Oregon participates in the STEM-focused Project Lead the Way and Math-in-CTE initiatives, and offers Academic Content with a Career Focus (an academic course taught around a CTE theme) and Infused Academic Content (academics are incorporated into traditional CTE programs) as vehicles of integration.

## Workforce Development

Oregon's Office of Community Colleges and Workforce Development, governed by the Higher Education Coordinating Council, offers many resources for job seekers, including three different job listing websites (Oregon Jobs, Job Central, and Government Jobs). The site also offers online toolkits for adult credentialing, GED programs, the ACT National Career Readiness Certificate, and information on career pathways and community colleges in the state. The Oregon WorkSource program, also run through the Office of Community Colleges and Workforce Development, is designed to help out-of-work Oregonians find new jobs. WorkSource centers are located throughout the state and help job seekers connect with retraining programs and job opportunities. Per the Workforce Investment and Opportunity Act (WIOA), local workforce development boards in Oregon must develop strategic plans to conform to federal requirements. Information about these requirements is available via WorkSource.

## Additional Resources

- Apprenticeship information:
- <http://www.ode.state.or.us/wma/teachlearn/cte/understanding-and-accessing-oregon-apprenticeships-final-10-12-2016.pdf>
- Oregon Career Information System:
- <https://oregoncis.uoregon.edu/Portal.aspx>
- Work-based learning page at Oregon Department of Education website:
- <http://www.ode.state.or.us/search/page/?=5579>
- WIOA local planning:
- <http://oregonlocalplanning.weebly.com>
- Oregon WorkSource:
- <http://www.oregon.gov/ccwd/Pages/services/index.aspx>
- Oregon CCWD:
- <http://www.oregon.gov/ccwd/Pages/index.aspx>
- Oregon CTE content and standards:
- <http://www.ode.state.or.us/search/page/?id=1787>



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# Career and Technical Education

## Pennsylvania Playbook



### RELEVANT COURSES

- Heavy Equipment Maintenance Technology/Technician
- Medium/Heavy Vehicle and Truck Technology/Technician
- Construction/Heavy Equipment/Earthmoving Equipment Operation

### RECENT FUNDING

Pennsylvania received and estimated \$40,722,778 in Perkins Basic State Grant funds in FY2015 and FY2016.

### KEY STATE DOCUMENTS

- *Cooperative Education Guidelines for Administration*
- *Establishing and Operating Effective Occupational Advisory Committees*
- *US Department of Labor Child Labor Bulletins 101 and 102*

## Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Professional Development
- Occupational Advisory Committees, Local Advisory Committees, Participatory Planning Committee, and Strategic Planning Committees
- Work-based learning

## Professional Development

Members of business and industry are encouraged to invest in the professional development of CTE instructors. Pennsylvania operates the Educators in the Workplace program in order to facilitate connections between businesses/members of industry and educators. It provides instructors the chance to learn more about career options in their respective fields as well as learn current industry practices. Teachers return to the schools with information regarding career opportunities and best practices to ensure student success, and businesses gain new contacts to reach new generations of talent. Members of business and industry can also contribute to instructor effectiveness through membership in various trade groups. For example, the Pennsylvania Association for Career and Technical Education (PA ACTE) co-sponsors a yearly conference to facilitate professional development. Members of business and industry can also contact the Bureau of Career and Technical Education to get involved.

## State Basics

Pennsylvania provides CTE at the secondary level through comprehensive high school and regional technology centers; the state delivers postsecondary CTE through its community college system. Various efforts are being taken to integrate academics into the delivery of CTE within the state, including professional development efforts, resource provision from the Mathematics Council (which helps instructors align content in mathematics to CTE program requirements) and the Pennsylvania CTE Best Practices Initiative, which “includes resources on literacy and numeracy” (ACTE). The state requires all CTE programs to develop academic skills, including those at regional CTCs, which rely on the sending schools to provide traditional English and math courses. This has led CTCs to integrate reading and math skills into their CTE curricula. In order to ensure that CTE students have dual enrollment opportunities, the state maintains a statewide articulation agreement template. Postsecondary institutions that receive Perkins funding must implement agreements with secondary institutions in order to award college credit or “equivalent clock hours” to CTE students that continue their CTE education beyond the secondary level; this credit goes towards the completion of a Program of Study. To ensure instructor effectiveness, Pennsylvania’s Bureau of Career and Technical Education operates a Comprehensive Personnel Development program in conjunction with Professional Personnel Development Centers located at IUP, PSU, and Temple University. Pennsylvania also maintains strict requirements for its instructors.



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# Pennsylvania Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 55 percent of the Pennsylvania labor market, but only 44 percent of workers in Pennsylvania possess the required skills” (National Skills Coalition).

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 33,800 fewer unemployed individuals
- 84,900 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACT

### Dr. Lee Burket

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(717) 787-5530  
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## Committees

Members of business and industry are encouraged to participate in the development, guidance, and monitoring of CTE through one of the various committees formed by the state. These opportunities are listed below, with a definition of the scope and duties of each committee provided by the Department of Education:

1. “**Local Advisory Committees** provide overall direction for the entire career and technical education program of a school district, area vocational-technical school, career and technical center or postsecondary institution. This committee advises on the whole range of activities and issues involving the career and technical education program, provides advice on appropriate program offerings and support services and, when appropriate, provides assistance and support to the institution.”
2. “**Occupational Advisory Committees** are established for each career technical education program or cluster of related programs. The committee advises the board, administration, and staff on curriculum, equipment, instructional materials, safety requirements, program evaluation, and other related matters and to verify that the programs meet industry standards.”
3. “**Participatory Planning Committee** is comprised of specified members as defined in the *Carl D. Perkins Vocational and Technical Education Act of 2006*. This committee is a requirement for local planning and certain competitive funding areas authorized in the Perkins legislation.”
4. “**Strategic Planning Committees** develop the schools’ strategic plans through active participation by parents, students, school directors, teachers, school administrators, other school personnel, business and other community representatives.”

## Work-Based Learning and Community Partners

Members of business and industry are encouraged to offer job shadowing experiences and cooperative education opportunities. Capstone Cooperative Education experiences are one form of cooperative education. They combine “formal in-school and technical education with a related employment experience at a school-approved, work-based learning site.” Students can participate in paid or unpaid opportunities as well as work-based learning experiences that earn them credit towards their degree. Businesses should consult the *Cooperative Education Guidelines for Administration* as well as Pennsylvania and federal child labor law in order to ensure compliance with legal requirements.

Some Pennsylvania communities have also developed intermediaries to coordinate relationships between schools, their students, and businesses. These include the Warren County School-to-Work Partnership, the Indiana County Alliance for Business and Education Leadership (A.B.E.L.), Central PA Gold Medal Initiative: Champions for Career Development, and Lehigh Valley Business Education Partnership. More information can be found at:

<http://www.pacareerstandards.com/partners.php>

## Additional Resources

- *Cooperative Education Guidelines for Administration* (available online)
- *Establishing and Operating Effective Occupational Advisory Committees* (available online)
- *Pennsylvania Career & Technical Education: College and Career Pathways for the 21<sup>st</sup> Century* (brochure, available online)
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Advance CTE State Profile
  - <https://www.careertech.org/Pennsylvania>
- Pennsylvania CTE
  - <http://www.careertechpa.org>



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# Career and Technical Education

## Rhode Island Playbook



### RELEVANT PATHWAYS

Rhode Island has adopted the Career Clusters framework. It has relevant pathways in construction, Power, Structural & Technical Systems, and auto & diesel technicians.

### RECENT FUNDING

Rhode Island received an estimated \$5,488,705 in Perkins Basic State Grant funds in FY2015 and an estimated \$5,496,906 in FY2016

### KEY STATE DOCUMENTS

- The State CTE Regulations establish the specific goals and requirement of CTE programs as well as establish the role of Local Education Agencies (LEAs) in administering programs.
- Rhode to Work Legislation
  - H8204 (2014)
  - S2863 (2014)
  - S2947 and H8327 (2014)

This policy initiative establishes the state CTE Board of Trustees, as well as encourage additional professional development of high school guidance counselors.

## State Basics

Rhode Island delivers CTE at the secondary level via comprehensive high schools, as well regional career and technical centers. For the postsecondary level, CTE is administered by the Community College of Rhode Island. Currently school districts are required to develop articulation agreements between participating high schools and postsecondary institutions. Dual enrollment is also available across the state and approved courses can transfer credit to any state school in Rhode Island. Professional development is jointly coordinated by educators and their local school boards to address individual educator needs as well as the overlying needs of the specific school district. Further, high school requirements necessitate educators to utilize common planning time to coordinate strategies among educators to improve instruction, address any gaps in curriculum, as well as embedding industry aspects and standards into coursework and material. Recent legislative efforts have expanded professional development to focus on school counselors and industry collaborations. In 2014, the legislative initiative known as the Rhode to Work action plan implemented several reforms to overhaul the CTE curriculum as well as increase career preparedness for graduating high school students.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Career and Technical Board of Trustees
- Governor's Workforce Board
- Workforce Partnership of Greater Rhode Island

## Rhode Island Career and Technical Board of Trustees

This newly created board assumes the same roles as the previous Rhode Island State Advisory Council on Vocational Education, composed of 15 members, 9 of whom represent the private employment sector, 5 of whom represent secondary and postsecondary educational institutions, and 1 of which is the state's Secretary of Commerce. This board advises the state Board of Education on CTE curriculum through its annual report. The board is also charged with establishing and maintaining professional connections with private sectors employers and with the authorization of the School Board and local district, it may directly administrate over local CTE programs as the School Board would.



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# Rhode Island Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 52 percent of Rhode Island’s labor market, but only 42 percent of workers in Rhode Island possess the required skills.”

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 3,000 fewer unemployed individuals
- 6,100 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## Governor’s Workforce Board

Initially established by executive order in 2005, the Governor’s Workforce Board (GWB) has since been legislatively supported in 2014, when it was designated as the primary policy making body for work forces matters in Rhode Island. As the statutory authority, the GWB coordinates and funds workforce development efforts in the state. The Board is comprised of 21 members primarily representing private employers across the state, as well as community and government representatives. The GWB also oversees the allocations of Job Development Funds, with it currently allocating funds into several categories covering employer reimbursement for training initiatives, funding for youth centers and youth summer employment, and hiring incentives for unemployed and underemployed workers. The Board also is responsible for developing Industry Partnerships between businesses within a common trade to target skills gaps and develop a necessary workforce for employers.

## Workforce Solutions of Providence/Cranston

Addressing the needs specifically of the Providence/Cranston, the Workforce Solutions of Providence/Cranston provide a wide array of resources to both employers and employees. Employers enjoy extensive position marketing and recruitment, as well as employee development through training facilitated Workforce Solutions at its career development centers throughout the Providence/Cranston area.

## Workforce Partnership of Greater Rhode Island

The Workforce Partnership of Greater Rhode Island acts in a similar manner to the Workforce Solutions of Providence/Cranston, but serving the remaining portions of the state. The Workforce Partnership acts as the local workforce investment boards for all cities and towns within Rhode Island except for Providence and Cranston. It provides resources to employers and job seekers alike. Employers have access to career recruitment and on the job (OJT) and pre-employment training of employees at reduced cost thanks to matching funds by the Workforce Partnership. Employees may also seek training on their own for specific career or personal development. This initiative is coordinated with the state’s Department of Labor and Training. Resources are available across the state at a variety of career centers.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Rhode-Island>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- State CTE Guidelines
  - <http://sos.ri.gov/documents/archives/regdocs/released/pdf/DESE/6665.pdf>
- Rhode to Work Action Plan Information
  - [http://www.rilin.state.ri.us/pressrelease/\\_layouts/RIL.PressRelease.ListStructure/Forms/DisplayForm.aspx?List=c8baae31-3c10-431c-8dcd-9dbbe21ce3e9&ID=9349&Web=2bab1515-0dcc-4176-a2f8-8d4beebdf488](http://www.rilin.state.ri.us/pressrelease/_layouts/RIL.PressRelease.ListStructure/Forms/DisplayForm.aspx?List=c8baae31-3c10-431c-8dcd-9dbbe21ce3e9&ID=9349&Web=2bab1515-0dcc-4176-a2f8-8d4beebdf488)
- Governor’s Workforce Board
  - <http://www.gwb.ri.gov/>
- Workforce Solutions of Providence/Cranston
  - <http://www.providenceri.com/wspc>
- The Workforce Partnership of Greater Rhode Island
  - <http://www.griworkforce.com/>



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# Career and Technical Education

## South Carolina Playbook

### RELEVANT PATHWAYS

South Carolina has adopted the Career Clusters framework. It has relevant pathways in auto tech, diesel machinery, welding, fabrication, construction and agriculture technology and machinery.

### RECENT FUNDING

South Carolina received an estimated \$5,159,268 in Perkins Basic State Grant funds in FY2015 and an estimated \$18,435,780 and an estimated \$18,226,143 in FY2016

### KEY STATE DOCUMENTS

- The Work-Based Learning Manual details South Carolina's WBL program, laying out the requirements and goals, as well as the necessary administrative information.
- The Apprenticeship Guide details the structure of the apprenticeship program as well as the requirements and expectations of employers participating in the program.
- The readySC™ Information covers the services to employers offered by the workforce training program, such as employee recruitment, training and instruction.



## State Basics

South Carolina delivers CTE at the secondary level through comprehensive high schools as well as through regional career and technology centers. At the postsecondary level, CTE is delivered through the state's technical colleges. Articulation of secondary coursework is made possible by South Carolina's dual enrollment system which allows high school students to take certain courses concurrently to receive college credit. The South Carolina Transfer and Articulation Center (SCTRAC) helps students identify articulation agreements and course equivalencies as well as provide resources to encourage students to complete eligible coursework and pursue articulation. New CTE educators are provided development and training through Developing Instructional Readiness for Educators of Career and Technology (DIRECT) Institutes, which incorporate both pre-training as well as in-service training to ensure educator quality. Additional development for teachers, counselors, career specialists, and administrators is available through multiple workshops (primarily through South Carolina's Educational Television Network) and conferences offered throughout the year. The annual Education and Business Summit is jointly hosted by South Carolina ACTE and the OCTE, and also provides professional development resources.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Work-Based Learning
- Educational and Business Summit
- readySC™
- Apprenticeship Carolina™

## Work-Based Learning

Established as a broad workforce redevelopment initiative, South Carolina's Work Based Learning (WBL) is intended to help promote modern skill development with an emphasis on CTE curriculum. Local education agencies (LEAs) are encouraged to have local advisory committees which are primarily comprised of local employers in a relevant industry field. These committees help organize and administrate local WBL opportunities as well as assist local educators and administrators with CTE course development. Further, committees are also responsible for organizing events and efforts to help increase the visibility of both CTE and WBL opportunities to local district students and families.



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# South Carolina Playbook



## ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 57 percent of South Carolina’s labor market, but only 47 percent of workers in South Carolina possess the required skills.”

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 17,700 fewer unemployed individuals
- 40,900 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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**Susan Pretulak**  
Vice President, Economic  
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Workforce  
Competitiveness  
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College System  
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## readySC™

Serving everything from the automotive industry to distribution, metals and textiles readySC™ serves the wide range of industrial employers in South Carolina. Working in conjunction with South Carolina Technical Colleges, readySC™ provides employers with recruitment services, employee training, and development all utilizing a project management approach. readySC™ already is partnered with key industry players present in South Carolina such as Mercedes-Benz, Volvo, BMW, Michelin, and GE, but also partners with smaller manufacturers and businesses. In addition to the training it provides to partnered businesses, readySC™ also provides technical training for workers seeking employment at technical colleges throughout the state. Participating workers are typically underemployed skilled experienced individuals who have completed high school or a GED equivalent and are on average 32 years old. readySC™ does require jobs filled by readySC™ to be permanent positions paid competitively with health benefits.

## Educational and Business Summit

This annual summit is the largest statewide professional development conference in South Carolina and takes a multifaceted approach to development focusing on industry connections and partnerships as well as disseminating best practices and other important industry knowledge. Jointly hosted by the OCTE and South Carolina ACTE, this summit offers opportunities for recruitment, business connections and continuing education credits.

## Apprenticeship Carolina™

Utilizing an earn while you learn model, similar to that employed by West Virginia, Apprenticeship Carolina™ implements on the job training (OJT) as well as job related education, and a scalable wage progression. Apprenticeship Carolina™ facilitates apprenticeships by acting as an organizing intermediary between employers and highly motivated apprentices. Interested businesses simply need to reach out to the program, which operates under the Division of Economic Development of the SC Technical College System, and coordinates will help facilitate the process. Participating have financial incentives established by the state, such as the Apprenticeship Tax Credit, which can result in a maximum of \$1,000 credit annually for each registered apprentice employed for 7 months out of the year. Employers can use this program as a tool of recruitment, as well as a method of employee educational improvement.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/South-Carolina>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Work Based Learning Manual
  - <http://ed.sc.gov/instruction/career-and-technology-education/career-guidance/work-based-learning/2016-17-work-based-learning-manual-pdf/>
- readySC™ Information
  - <http://www.readysc.org/our-services.html>
- Educational and Business Summit
  - <http://www.ebsummit.info/>
- Apprenticeship Guide
  - <http://www.apprenticeshipcarolina.com/employers.html>



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# Career and Technical Education

## South Dakota Playbook

### RELEVANT PATHWAYS

Automotive Repair, Heavy Equipment Operation, and Diesel Technician

### RECENT FUNDING

- \$4,218,783 Perkins
- South Dakota does not provide categorical funding for CTE
- State foundational funding formula for LEA allocations
- Performance funding for community colleges

### KEY STATE LEGISLATION

- HB1072: Provides student names to tech institutes
- HB1118: Independent oversight of state technical institutions
- S.D. Codified Law §13-53B-1: Articulation agreements to ensure general education credit transferability
- Build Dakota: Public-private partnership to provide student scholarships
- South Dakota Experimental Program to Stimulate Competitive Research (EPSCoR): Grant funds to STEM CTE programs



## State Basics

In South Dakota, CTE is delivered at the secondary level through comprehensive high schools, multi-district CTE centers, tribal schools, and alternative state schools. Postsecondary CTE is delivered through state technical institutes and four-year public universities. Another important delivery method is through the youth corrections facility high school program Star Academy. South Dakota uses content standards based on the national Career Clusters and aligned to the Common Career Technical Core. The state Programs of Study were developed through input from advisory committees, business and industry representatives, and secondary and postsecondary teachers. While South Dakota's CTE programs are not as extensively designed as more populous states, private entities have partnered with state government to grow educational opportunities and improve the state economy.

## Access Points

The following are opportunities for employers to become involved:

- Work-Based Learning, Internships, Assistantships
- Career Camps
- Local Education Agencies (LEAs)
- Program Advisory Committees
- South Dakota WINS Workforce Development Program

## Local Focus

South Dakota state funding is allocated to Local Education Agencies (LEAs) who apply for grants. Using locally-based educational units allows for programs to be tailored to region-specific market needs. This also provides an opportunity for AED affiliates to become actively involved in program development at the local level.



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## ECONOMIC IMPACT

By 2018, 56% of all South Dakota jobs will require some training beyond high school, including 49,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$648 higher median per capita income
- 1,600 fewer unemployed
- 4,300 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACT

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# South Dakota Playbook Public/Private Initiatives



## Regional Program Development

South Dakota CTE program development is divided into seven different regions, each with a designated curriculum coordinator. This regional focus provides local school districts with direct access to consistent resources that will help them best meet the market demand in their local area. Each coordinator is also directly responsible for the specific schools within their region and can provide personal attention to administrators and teachers who are implementing the CTE curriculum.

## Best Practices List

### Integration with Traditional Academic Programs

- CTE programs are fully integrated with traditional education programs. Students are able to attend tech centers during part of the school day and earn credit that counts towards both a high school degree and a certification or college credit

### Career Services System

- There is no CTE-specific statewide system available, but the state employment website SD Works can be used to locate internship and employment opportunities within CTE fields.

South Dakota has developed several educational initiatives within recent years. Governor Dennis Daugaard has been a strong advocate for work-based learning opportunities and prominent businessmen have partnered with the state to advance technical education.

- **The Dakota Seeds Program** works to increase the number of internships and assistantships available for undergraduate students.

- **South Dakota WINS** is a governor's initiative that provides career camps for students to be able to spend a day learning from professionals in relevant fields.

- **The Governor's Internship Opportunities Program** serves as an intermediary between students and employers seeking technical interns.

- **Build Dakota** is a public-private partnership between the state and a prominent hospital founder and philanthropist T. Denny Sanford that provides full-tuition scholarships at four state technical institutions. In order to qualify for the scholarship, a student must pursue a degree in an area that is designated high-need for the South Dakota workforce and agree to work full-time in the state within the fields of study for a minimum of three years following graduation.

## Additional Resources

- CTE Snapshot:
  - [https://careertech.org/sites/default/files/pictures/SouthDakota\\_CTESnaps\\_hot2015.pdf](https://careertech.org/sites/default/files/pictures/SouthDakota_CTESnaps_hot2015.pdf)
- State Plan:
  - <http://s3.amazonaws.com/PCRN/docs/stateplan/SD5YearStatePlan.pdf>
- ACTE Fact Sheet:
  - <http://www.lakeareatech.edu/sdacte/downloads/DataSheet.pdf>
- South Dakota CTE Website:
  - <http://doe.sd.gov/cte/cte.aspx>
- Build Dakota Program:
  - <https://www.builddakotascholarships.com/>



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# Career and Technical Education

## Tennessee Playbook



### RELEVANT PATHWAYS

- Architecture and Construction Equipment
- Automotive Maintenance and Light Repair

### RECENT FUNDING

- \$23,238,937 Perkins
- State funding formula includes class size, instructional salary unit cost, classroom resources, transportation
- Performance based funding for community colleges

### KEY STATE LEGISLATION

- Dual Enrollment Grant
- SB87: Changed vocational education to CTE
- Complete College Tennessee Act: Student performance goals
- Drive to 55 Program: Goal is 55% of population with an associate degree or higher

## State Basics

Tennessee delivers CTE programming at the secondary level through comprehensive high schools and CTE high schools. CTE courses in these schools are fully integrated with the core academic curriculum. CTE is delivered at the postsecondary level through Tennessee state technology centers that provide 2-year and certificate occupational training programs. CTE is also delivered through the community college system. The Tennessee School for the Blind, School for the Deaf, and the Department of Corrections each support CTE training for their students. Tennessee state CTE standards are aligned to the national Career Clusters. Each course is designed to incorporate and encourage students to obtain industry certification. The state uses both statewide and local articulation agreements to deliver CTE programming. The state is currently seeking ways to expand dual enrollment opportunities for high school students. Several dual-enrollment policies were enacted in 2014, and the state continues to develop new initiatives.

## Access Points

The following are opportunities for employers to become involved:

- Work-Based Learning including state-coordinated internships, apprenticeships, and paid work
- Local Education Agencies (LEAs)
- Local Career Academies
- Career and Technical Student Organizations (CTSOs)
- TN Council for Career & Technical Education

## Jobs4TN

The state employment plan Jobs4TN focuses on the six target clusters in which TN has a competitive advantage: automotive; chemicals and plastics; logistics and distribution services; business services; health care; and advanced manufacturing and energy technologies. State labor market demand in these areas is considered when developing career programs that will provide students with job-ready skills and employers with the technicians they need to continue growing in these fields.



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## ECONOMIC IMPACT

By 2018, 56% of all Tennessee jobs will require some training beyond high school, including 218,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$1,110 higher median per capita income
- 13,200 fewer unemployed
- 39,200 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Tennessee Playbook



## Tennessee Transfer Pathways (TTPs)

TTPs are advising tools that are designed to help community college students transfer to a Tennessee university. The state has implemented agreements that guarantee that all courses taken at a state community college will be accepted at state colleges and universities. Such courses are also guaranteed to count toward the completion of a particular major. There is also a “reverse transfer” program in which students can receive an associate degree from a two-year college after transferring to a four-year college. Tennessee is an excellent example of creating flexible learning pathways that allow students to transition into technical fields no matter where they currently are on the typical four-year college pathway.

## Best Practices List

### Pools of Experts:

At the state level, Tennessee has pools of industry experts who approve state programs of study and ensure industry input. However, The state plans are then adapted by Local Education Agencies to meet local demands. LEA's do not have officially designated industry experts to rely upon, but they do provide an opportunity for AED affiliates to provide industry expertise that may currently be lacking. Local input will be more effective in obtaining the needed workers for local businesses and should be the first place that businesses seek to engage the state CTE curriculum.

## Developing Programs of Study

The Tennessee state Programs of Study focus on the development of high-skill, high-wage, high-demand job opportunities. The Tennessee Department of Labor and Workforce Development, the Tennessee Board of Regents, and Local Education Agencies collaborate to create programs that meet both state and local market demand. The state also provides a Student Industry Certification guide to ensure that CTE students put their classroom skills to good use and obtain credentials that will allow them to obtain gainful employment. Industry certification requirements are aligned with career plans that span the student's education from middle school to possible postsecondary study. Each state career cluster has a designated consultant whom students and teachers can contact to ensure they are meeting state and industry standards.

## Additional Resources

- TN CTE Snapshot:
  - [https://careertech.org/sites/default/files/pictures/Tennessee\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Tennessee_CTESnapshot2015.pdf)
- TN State CTE Plan:
  - <http://s3.amazonaws.com/PCRN/docs/stateplan/TN5YearStatePlan.pdf>
- Jobs4TN:
  - <https://www.jobs4tn.gov/vosnet/Default.aspx>
- TN Dept. of Education CTE:
  - <http://www.tn.gov/education/section/career-and-technical-education>



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# Career and Technical Education

## RELEVANT PATHWAYS

Texas offers pathways in Facility & Mobile Equipment Maintenance (Transportation, Distribution, & Logistics cluster) and Maintenance, Installation, & Repair (Manufacturing cluster).

## RECENT FUNDING

Texas received \$91,909,431 in Perkins Basic State Grant funding in FY2015 and \$92,739,063 in FY2016.

## KEY STATE LEGISLATION

HB2628 (2015) requires the Texas Higher Education Coordinating Board (THECB) to to develop CTE programs of study and periodically review them for alignment across education levels and with student interest and industry needs.

Also in 2015, THECB adopted a goal to have 60% of 25-to-34 year old Texans attain a postsecondary degree or certificate by 2030.

HB842 (2013) allows high schools to offer CTE courses for college credit

## Texas Playbook



## State Basics

Texas offers CTE at the secondary level in a variety of settings, including comprehensive high schools, Career Academies that are either stand-alone or contained within a comprehensive high school and magnet schools with integrated academic and CTE coursework. At the postsecondary level, 57 community, state, and technical colleges offer CTE across 79 different campuses, including four Texas State Technical College campuses. The Texas Correction System and Texas Youth Commission also offer CTE courses. Every school district in Texas is required to offer students the opportunity to earn up to 12 credit hours a semester of dual-enrollment courses, and Texas offers a statewide articulation program called the Advanced Technical Credit grant program. Texas also runs Early College High Schools and offers the TWO-STEP program to ease transfer between institutions.

## Access Points

- Work-based learning: Texas Education Agency Work-Based Learning toolkit
- Workforce Development: Texas Workforce Commission
- Curriculum Development: Texas Essential Knowledge & Skills CTE Review Committee

## Work-Based Learning

The Texas Education Agency (TEA) runs a website dedicated to helping educators implement work-based learning (WBL) programs at their institutions via an online course. The course is divided into modules covering subjects such as federal and state labor laws, documentation, career cluster-specific considerations, and classroom instructional tips. The website also includes resources like templates for syllabi and program and training plan agreements, job search reports, and student evaluations. Individual school districts administer work-based learning programs at the secondary level, and teachers in CTE subjects must be trained in work-based learning rules and safety. TEA maintains a list on its website of professional associations that offer WBL training, and the Texas Essential Knowledge and Skills (TEKS) standards require CTE students in public schools to complete a capstone course called a practicum that includes a work-based learning component.



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## ECONOMIC IMPACT

If Texas increased the share of its population with an associate's degree or professional certificate by 10 percentage points, the state would have:

- A \$1,154 higher median per capita income
- 32,800 fewer unemployed individuals
- 193,200 fewer people living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Texas Playbook



## Curriculum Development

Individual CTE courses are developed at the institutional level, but must conform to the Texas Essential Knowledge and Skills (TEKS) standards for the subject area. Additionally, all CTE programs must be reviewed regularly by the local CTE advisory board, which is comprised of stakeholders from the area surrounding the school district, and the TEKS themselves are reviewed by a state-level CTE TEKS Review Committee, which includes representatives from secondary and postsecondary education, academia, and business and industry.

## Best Practices List

### Academic Integration

All Texas school districts must offer at least three CTE programs of study from at least three different AchieveTexas Career Clusters, and both the Recommended and Distinguished Achievement High School Graduation Plans' core subject requirements are satisfied by CTE courses that augment standard academic courses with a CTE theme. HB2201, passed in 2013, requires the state Board of Education to develop at least six new advanced CTE courses to satisfy the fourth/highest level math requirement.

### Performance Funding

Texas uses performance funding at the secondary level, disbursing federal funds to schools on the basis of their ability to meet benchmarks in academic attainment, graduation rates, test scores, and placement rates.

## Workforce Development

The Texas Workforce Commission (TWC) offers numerous resources for job seekers, employers, community and workforce partners, and students, parents, and educators. Resources for job seekers include the WorkInTexas website for job postings, a career planning portal, links to occupational and vocational training opportunities, a resume posting site, and information about educational opportunities. Resources for businesses include information on workforce training and training assistance, employment laws and labor market information, and hiring incentives. Additionally, TWC offers a searchable database of job seekers and a portal for posting job openings. The site also includes information for students and parents about career awareness and education and training opportunities.

## Additional Resources

- Texas Education Agency Work Based Learning
- <http://www.teawbltraining.org>
- Texas Workforce Commission:
- <http://www.twc.state.tx.us>
- Texas Education Agency
- <http://tea.texas.gov>
- Professional associations offering WBL training:
- <http://tea.texas.gov/index2.aspx?id=4273>
- List of practicum course requirements:
- <http://cte.tamucc.edu/practicum-courses/>
- WorkInTexas website:
- [https://wit.twc.state.tx.us/WORKINTEXAS/wtx?pageid=APP\\_HOME&cookiecheckflag=1](https://wit.twc.state.tx.us/WORKINTEXAS/wtx?pageid=APP_HOME&cookiecheckflag=1)
- TEKS information, including the CTE Review Committee
- [http://tea.texas.gov/Curriculum\\_and\\_Instructional\\_Programs/Curriculum\\_Standards/TEKS\\_Texas\\_Essential\\_Knowledge\\_and\\_Skills\\_\(TEKS\)\\_Review/Career\\_and\\_Technical\\_Education\\_Texas\\_Essential\\_Knowledge\\_and\\_Skills/](http://tea.texas.gov/Curriculum_and_Instructional_Programs/Curriculum_Standards/TEKS_Texas_Essential_Knowledge_and_Skills_(TEKS)_Review/Career_and_Technical_Education_Texas_Essential_Knowledge_and_Skills/)
- AchieveTexas:
- <http://www.achievetexas.org>



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# Career and Technical Education

## Utah Playbook

### RELEVANT PATHWAYS

Utah offers several relevant pathways, including Mechanics & Repairs, Agricultural Systems Technology, and Heavy Duty Diesel

### RECENT FUNDING

In FY2015, Utah received \$12,473,193 in Perkins Basic State Grant funding.

### KEY STATE LEGISLATION

HB198, passed in 2015, created the Strengthening College & Career Readiness Program, which appropriates \$400,000 in grants to local education agencies to strengthen the skills of college and career counselors.

The PACE plan supported by Governor Herbert and part of a larger workforce development initiative, aims to have 27% of Utahns earn an associate's



## State Basics

CTE in Utah is delivered at the secondary level through comprehensive high schools, and at the postsecondary level through four-year colleges and universities and the eight Utah College of Applied Technology (UCAT) campuses. Secondary students in Utah may take dual-enrollment courses via UCAT at either a college campus or their high school, and ¼ of UCAT students are dual-enrolled high schoolers. Students may also take concurrent enrollment courses offered at their schools in conjunction with four-year colleges or attend one of six Early College High Schools in the state. In Utah, articulation agreements primarily deal with the transfer of credits between institutions, and examples are available at the regional and state level online. Utah has a large skills gap, as 57% of jobs in the state are middle-skill jobs but only 48% of workers possess the required skills. In 2018, Utah will have 1,646,500 jobs, of which 59% will require some education or training beyond high school and 164,000 will require a certificate.

## Access Points

- Work-based learning: Utah State Office of Education (USOE)
- Workforce Development: Utah Department of Workforce Services
- Curriculum Development: Utah State Board of Education- CTE Skilled and Technical Science

## Work-Based Learning

Work-based learning (WBL) is a major component of CTE programs in Utah. WBL in Utah begins in elementary school with the Awareness phase, in which students are introduced to different careers via guest speakers and workplace visits. In grades 7-8 students begin exploring careers through job shadowing and career fairs during the Exploration phase, and continue these activities during the Orientation phase in grades 9-10. In grades 11-12, students enter the Preparation phase and begin preparing for their chosen career via internships and apprenticeships. Utah offers a work-based learning manual on its Board of Education website that includes information for educators about partnering with businesses to establish WBL opportunities, as well as relevant labor laws and other information. Local school boards are responsible for setting more detailed WBL requirements for their districts.



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## ECONOMIC IMPACT

If Utah increased the share of its population with an associate's degree or professional certification by 10 percentage points, the state would have:

-A \$673 increase in median per capita income

-5,900 fewer unemployed individuals

-14,600 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Utah Playbook



## Curriculum Development

Utah develops its state CTE standards through the use of national educational and industry benchmarks, and each career cluster partners with relevant local and state industry organizations and businesses to determine program standards and provide educational opportunities. Utah CTE programs are subject to regular evaluation for conformity to state and federal academic and safety standards by state officials.

## Best Practices List

### Local Flexibility

While the Utah State Office of Education makes recommendations for CTE courses at the secondary level, individual institutions are allowed to design their own programs of study provided they conform to state, federal, and industry standards. The USOE approves secondary CTE programs of study and the Utah State Board of Regents and UCAT Trustees approve postsecondary CTE programs of study.

### Academic Integration

Utah has several Career Academies, which integrate academics and CTE around an occupational theme, and professional development courses for CTE teachers in Utah focus heavily on academic-CTE integration. Utah allows certain CTE courses to count towards general education graduation requirements in math and science, and participates in the Math in CTE and Project Lead the Way programs.

## Workforce Development

Utah's Department of Workforce Services website offers resources for both job seekers and employers, as well as general labor market information. Resources for job seekers include help obtaining occupational licensing, an occupational exploration portal, and in-person and online job-seeking skills workshops. The site also has links to FirmFind, which contains information about 80,000 businesses in Utah, job banks in neighboring states and at the federal level, online state classified ads, and a directory of Utah employer web pages. Resources for employers include a job posting engine, information about labor market trends, and employment laws. Further resources include business development aid in the form of recruitment support, employee skill development (subsidies for on-the-job training, apprenticeship information, etc.), and information about hiring incentives and tax credits.

## Additional Resources

- Articulation agreements in Utah:
- <http://www.schools.utah.gov/CTE/pathways/Articulation-Agreements.aspx>
- State Office of Education Website CTE Main Page:
- <http://www.schools.utah.gov/CTE/sts/default.aspx>
- Utah Department of Workforce Services:
- <http://jobs.utah.gov>
- Utah Work-Based Learning:
- <http://www.schools.utah.gov/CTE/wbl/>
- Example local WBL manual:
- <http://www.schools.utah.gov/CTE/wbl/Work-Based-Learning-Manual/Local-Board-Sample-Policy.aspx>
- FirmFind:
- <http://jobs.utah.gov/jsp/firmfind/welcome.do>
- Job posting for employers:
- <http://jobs.utah.gov/employer/index.html>



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# Career and Technical Education

## Virginia Playbook



### RELEVANT COURSES

Virginia offers a Facility & Mobile Equipment Maintenance career pathway within the Transportation, Distribution & Logistics Career Cluster. Furthermore, the Trade and Industry program area includes course options in Aviation Maintenance Technology and Diesel Equipment. More information regarding courses can be found on the Virginia Department of Education website.

### RECENT FUNDING

Virginia received an estimated \$23,902,660 in Perkins Basic State Grant funds in FY2105 and an estimated \$24,019,623 in FY2016.

## State Basics

Virginia delivers CTE at the secondary level through comprehensive high schools, area technical high schools and career centers, regional career and technical centers, and STEM academies, while postsecondary CTE opportunities are found in the community college system. According to ACTE, CTE coursework is reviewed and correlated to the Standards of Learning “where appropriate” to reinforce core academic competencies at the secondary level. The state also tries to provide high school students with college credit opportunities. Secondary schools and the community college system develop dual enrollment agreements that allow students to earn college credit. The state’s framework, the *Virginia Plan for Dual Enrollment Between Virginia Public Schools and Community Colleges*, allows for these agreements at the local level. While ACTE notes that Virginia has adopted the Career Clusters model, it has facilitated CTE under eight program areas in the past. These include (among others, agricultural education, technology, and trade and industrial education). According to ACTE, Virginia ensures effective instruction by providing professional development opportunities that include, but are not limited to, the CTE Resource Center (which provides curriculum-related in-service and training sessions) and collaboration with Virginia ACTE.

## Access Points

The following are opportunities for employers to become involved. Each Access Point is further explored throughout the rest of this document:

- Local CTE Advisory Committees
- CTE Curriculum Review/Development Committees
- Work-Based Learning Opportunities

## Local CTE Advisory Committees

Local CTE Advisory Committees are critical to the development of strong ties between schools and members of business and industry. They help facilitate partnerships between secondary schools and members of business and industry in order to “create rigorous CTE programs that respond to the needs of local, regional, and state labor markets.” These committees offer a dynamic approach to improving the delivery of CTE by facilitating input (from key stakeholders) that contributes to various key components of the CTE framework, including: curriculum development/revision; work-based learning opportunities; providing mentor services to students; and providing professional development to CTE instructors through externships and mentorships that help ensure classroom experiences are relevant and produce effective student outcomes. Local CTE Advisory Committees also support the CTE credentialing initiative. This provides another great opportunity for members of business and industry to provide insight into the development of CTE.



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# Virginia Playbook



## Work-Based Learning

Virginia offers various work-based learning opportunities for CTE students. These include:

1. Job shadowing
2. Mentorship
3. Service Learning
4. Internship
5. Clinical experience
6. Student apprenticeship
7. Cooperative education

While job shadowing and mentorships help facilitate a basic understanding of a particular career, internships, student apprenticeships, and cooperative education experiences offer a more in-depth experience in which students work and develop skills necessary to be successful in the workforce. Internships can be either paid or unpaid, whereas student apprenticeships and cooperative education opportunities are paid. Furthermore, student apprenticeship and cooperative education opportunities are closely monitored by a school coordinator. Students can receive credit for all three types of experiences.

Three types of advisory committees exist to facilitate work-based learning experiences. General Advisory Committees are based on school divisions and include members from business and industry and “assist and advise career and technical education administrators and other planners in the operation of all CTE programs within the division.” The Occupational Advisory Committee “provides guidance and direction for specific occupational programs” but maintains no “administrative or policy-forming powers.” Finally, Program/Cluster Advisory Committees include members of business and industry and focus on a particular CTE program/cluster area. They provide guidance and direction to work-based learning opportunities. Interested parties should contact their local education agencies.

## CTE Curriculum Review/Development Committee

Members of business and industry are encouraged to participate in CTE Curriculum Review/Development Committees. There are currently 36 committees that consist of instructors as well as other stakeholders. This represents a great opportunity to shape the delivery of CTE at the secondary level. According to state guidance, committee meetings are conducted in-person, virtually, or a combination of the two. In-person meetings are conducted in Henrico County’s CTE Resource Center. Review committees meet to develop, review, and amend curriculums. Interested parties should consult their local school districts to gather more information about meeting schedules and opportunities to participate.

## Additional Resources

- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- AdvanceCTE State Profile
  - <https://www.careertech.org/Virginia>
- *Career and Technical Education Work-Based Learning Guide*
  - [http://www.pen.k12.va.us/instruction/career\\_technical/work-based\\_learning/wbl\\_learning\\_guide.pdf](http://www.pen.k12.va.us/instruction/career_technical/work-based_learning/wbl_learning_guide.pdf)
- VA CTE Resource Center
  - <http://www.cteresource.org/cpg/>
- VA Department of Education CTE Resources
  - [http://www.pen.k12.va.us/instruction/career\\_technical/index.shtml](http://www.pen.k12.va.us/instruction/career_technical/index.shtml)



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### ECONOMIC IMPACT

Per Advance CTE, “middle-skill jobs account for 49 percent of Virginia’s labor market, but only 40 percent of workers in Virginia possess the required skills” (National Skills Coalition).

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 14,500 fewer unemployed individuals
- 45,400 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## Vermont Playbook



### RELEVANT PATHWAYS

Vermont has adopted the Career Clusters framework, into six career fields. It has relevant pathways in agricultural technology and machinery, construction, auto tech, and welding.

### RECENT FUNDING

Vermont received an estimated \$4,214,921 in Perkins Basic State Grant funds in FY2015 and in FY2016

### KEY STATE DOCUMENTS

- SB130 (2013) Also known as Vermont Act 77, this act establishes the Flexible Pathways to High School Graduation Initiative which allows students to enroll in 2 dual enrollment courses in high school at no cost, as well as establish early college programs such as VAST at Vermont Tech.
- HB242 (2013) Creates the Vermont Strong Scholars and Internship Initiative which provides tuition loan forgiveness to graduates who remain in Vermont and work in STEM fields.
- Work-Based Learning Manual details the requirements and goals of Vermont's WBL program.

## State Basics

CTE in Vermont at the secondary level is delivered via comprehensive high schools and regional career and technical centers. At the postsecondary level, CTE is delivered through the Community College of Vermont and its statewide campuses, as well as Vermont Technical College. The FastForward program enables students enrolled at regional centers to earn dual credit for CTE courses, while early college programs established in 2013 allow high school seniors to participate in the Vermont Academy of Science and Technology. This senior year alternative to high school allows a senior to complete their final year of high school while working towards a college degree. Professional development focuses on comprehensive CTE development involving educators, counselors, and administrators, who collaboratively develop career pathways, implement industry aspects into curriculum, and effective methods of student assessment. Prospective CTE educators from non-education backgrounds have the opportunity to obtain state licensure via the License by Evaluation or Peer Review Program. Vermont is also partnered with Maine on the Math-in-CTE program.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Work-Based Learning
- VAST Employer Partnership
- Career Resource Centers
- Registered Apprenticeships

## Work-Based Learning

As a part of a broader effort to expand practical skills sets of students, the Work-Based Learning (WBL) seeks to impart 21<sup>st</sup> Century Skills on students by exposing them to real world work environments that are not accessible in a traditional classroom setting. Although not specifically for CTE, WBL can and has been implemented into CTE curriculum. Through this program, local school boards assist CTE administrators and educators to facilitate work-based learning opportunities with local employers and businesses for students. Businesses wishing to facilitate this type of program can also reach out to school boards who coordinate with local CTE educators to develop coursework and with the Agency of Education to secure necessary arrangement for local schools such as liability insurance for students.



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# Vermont Playbook



## VAST Employer Partnership

As a part of the newly developed early college program, Vermont Academy of Science and Technology (VAST), employers have the opportunity to coordinate with Vermont Tech to train and recruit recent graduates. Employers first identify Vermont Tech programs that would provide the necessary skills of their desired employees. With employer input, students are then recruited from Vermont high schools and participate in the senior year alternative VAST program where they complete their final year of high school while concurrently working toward their degree. After the first year, employers provide the student with a paid internship or apprenticeship. During the second year employers then make tax-exemptible contributions to prospective students' tuition. Upon graduation, employers have the opportunity to evaluate the student's training and make the decision to hire the student. If the student is hired following the program, workers make commitments to stay with the employer at least until ROI can be made.

## Career Resource Centers

Provided by the Vermont Department of Labor's Workforce Development Division, these centers tailor to both employees by providing employment opportunities, career development resources, and employer information, and employers by providing interview space, hiring incentives, job postings, human resource information, and workforce training. These centers are located regionally across the state, and often host recruitment events such as job fairs.

## Registered Apprenticeships

Also coordinated through the Workforce Development Division of the Vermont Department of Labor, the registered apprenticeship program seeks to connect employers with highly motivated workers seeking apprenticeships in different industrial trades. The Workforce Development Division facilitates this process by collecting all interested applicants and then matching them with relevant businesses who then 'sponsor' workers. Generally programs last between 2-4 years with apprentices working on a progressive pay scale that reaches the full value by the conclusion of the program. While on the job, apprentices receive practical on the job training (OJT) and in some instances classroom instructional training. Upon completion of the program the Division also awards a certificate of apprenticeship completion to the apprentice. This facilitated practice provides businesses with unique recruitment opportunities as well as possible worker development.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/Vermont>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Work-Based Learning Manual
  - <http://education.vermont.gov/sites/aoe/files/documents/edu-work-based-learning-manual.pdf>
- VAST Employer Partner Program
  - <https://www.vtc.edu/academics/vermont-academy-science-technology/vast-employer-partner-program>
- Career Resource Centers
  - <http://labor.vermont.gov/workforce-development/career-resource-centers/>
- Registered Apprenticeship Program
  - <http://labor.vermont.gov/workforce-development/apprenticeship/>



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in Public Policy

College of William & Mary  
Williamsburg, VA

### ECONOMIC IMPACT

Per Advance CTE, "middle-skill jobs account for 49 percent of Vermont's labor market, but only 41 percent of workers in Vermont possess the required skills."

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 2,000 fewer unemployed individuals
- 4,000 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## Washington Playbook



### RELEVANT PATHWAYS

Washington offers a Heavy Equipment Mechanic track within its Technology & Industry Pathway.

### RECENT FUNDING

In FY2015 Washington received \$20,564,886 in Perkins Basic State Grant Funding. The state received \$20,450,079 in FY2016.

### KEY STATE LEGISLATION

SB5863 calls for the recruitment of underrepresented populations for transportation apprenticeships and directs the state to report on the success of these programs.

The biennial state budget passed in 2015 cuts tuition by 5% at state community and technical colleges and makes grants for the construction of STEM

## State Basics

CTE in Washington is administered at the secondary level through both comprehensive high schools and Skills Centers, which are regional training centers that provide supplemental CTE training to area high school students. At the postsecondary level, CTE is delivered via community and technical colleges, and the state Workforce Board maintains CTE programs in the state correctional system. Washington maintains a multitude of programs to align secondary and postsecondary CTE, particularly in terms of dual/concurrent enrollment. These include Early Colleges, Gateway to College for at-risk students, and the dual-enrollment programs Running Start, College in the High School, and Washington Tech Prep and Technical College Direct Funded Enrollment Programs. Middle skill jobs comprise 50% of Washington's labor market, but only 47% of workers possess the required skills, resulting in a skills gap. By 2018, Washington will have 3,546,400 jobs, of which 59% will require more than a high school education and 350,000 will require certificates.

## Access Points

- Work-based learning: Washington Office of the Superintendent of Public Instruction (OSPI)
- Workforce Development: Washington Workforce Training & Coordinating Board
- Curriculum Development: OSPI

## Work-Based Learning

Washington's Office of the Superintendent of Public Instruction website includes a manual in PDF form to help schools establish work-based learning opportunities in conjunction with local businesses, as well as numerous forms and worksheets, and information sheets related to implementing a work-based learning program. The manual contains information on various types of work-based learning, including school-based enterprises, job shadowing, worksite learning (instructional and cooperative), and structured field trips. The appendix lists postsecondary institutions offering approved worksite learning programs. All worksite (off-campus and hands-on) learning programs must be coordinated by a school district employee certified in the CTE program where the experience is being offered.



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## ECONOMIC IMPACT

If Washington increased the share of its population with an associate's degree or professional certification by 10 percentage points, the state would have:

- A \$1,208 higher median per capita income
- 17,000 fewer unemployed individuals
- 50,900 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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# Washington Playbook



## Curriculum Development

All CTE programs of study are evaluated for reapproval on a rolling basis, with each program being evaluated once every five years. Further, all school districts must consult with an Advisory Committee when developing CTE programs of study and standards. The Advisory Committee should include representatives from all stakeholders, including business and industry and labor organizations, and should meet regularly to provide advice in the "design, development, delivery, evaluation, and continuous improvement" of CTE programs. Advisory Committees are further classified as either General (providing guidance to the entire district governing board) or Program-Specific (advising instructors in a specific field).

## Best Practices List

### Work-Based Learning

The Workforce Board offers a novel work-based learning opportunity in its Homeless House Project, where CTE students are challenged to design and build portable homeless shelters that can be used by cities to house their homeless population.

### Alignment & Articulation

Washington maintains an Early College program where students from underrepresented groups are able to earn a high school diploma as well as one to two years of tuition-free college credit in four years. Gateway to College helps at-risk students aged 16 to 21 and high school dropouts to earn high school and college credits in CTE courses.

## Workforce Development

Washington's Workforce Training and Coordinating Board (Workforce Board) provides many resources. The Workforce Development Directory contains information about more than 40 workforce development programs in the state. The state offers Opportunity Partnership Grants to industry mentors that offer relevant experience to students participating in the state Opportunity Grant Program, and provides workers and job-seekers with workplace-based job training via eLearning. The Workforce Board also conducts research and publishes reports on the labor market, including youth unemployment and the extent of the skills gap in mid-level industries. Another novel feature of the Workforce Board is its biennial survey of employers about workplace issues, including skills gaps, hiring difficulties, and training practices, run in conjunction with the Association of Washington Business and Washington Chamber of Commerce. Finally, the Workforce Board website contains a link to Washington Career Bridge, the Career Services portal designed to help job seekers obtain education and training and explore career paths.

## Additional Resources

- Work-based learning in Washington:
- <http://www.k12.wa.us/careertech/WorkBasedLearning.aspx>
- Workforce Training & Coordinating Board:
- <http://www.wtb.wa.gov/WWDS.asp>
- Office of the Superintendent of Public Instruction:
- <http://www.k12.wa.us/careertech/>
- Worksite learning manual:
- <http://www.k12.wa.us/careertech/WorkBasedLearning/WorksiteLearningManual.pdf>
- Washington Career Bridge:
- <http://www.careerbridge.wa.gov>
- CTE Advisory Committees:
- <http://www.k12.wa.us/careertech/Forms/CTEProgramStandards2011.pdf>



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# Career and Technical Education

## Wisconsin Playbook



### RELEVANT PATHWAYS

- Transportation Facility and Mobile Equipment Maintenance
- Construction Maintenance/Operations

### RECENT FUNDING

- \$20,241,685 Perkins
- No special state funding for K-12 CTE education
- Technical colleges receive state funding to support postsecondary CTE programs
- Competitive grants provided by the WI Technical College System

### KEY STATE LEGISLATION

- SB284: Enables 7th & 8th grade students to earn high school credit
- SB334: Provides technical scholarships
- SB51: Allows math or science credit for CTE courses
- SB331: Incentive grant program for high school CTE programs

## State Basics

In Wisconsin, secondary CTE courses are delivered through comprehensive high schools, career academies, and CTE-specific high schools. At the postsecondary level, CTE is delivered through the state's technical college system. Programming is also available for individuals in correctional facilities and institutions that serve students with disabilities. The state-led Youth Options program allows high school students to enroll in courses at a technical college for both high school and college credit. There is also a state-supported two-year youth apprenticeship program. The Wisconsin Technical College System provides for credit transfer between state colleges and universities. In 2013, Governor Scott Walker announced an initiative to develop a core set of 30 credits that is transferrable between all state institutions. A 2015 initiative made a reserve transfer possible to allow students holding bachelor degrees to receive associate degrees as well.

## Access Points

The following are opportunities for employers to become involved:

- College and Workforce Readiness Council
- Work-Based Learning, Internships, Apprenticeships
- State Curriculum Content Standards Workgroups
- Wisconsin Association for Career and Technical Education (WATCE)
- Career and Technical Student Organizations (CTSOs)

## Skills Standards Programs

Wisconsin operates a Skill Standards Certification Program that assists students in transitioning from secondary to postsecondary education and ensures the attainment of 21st century skills. In 2016, certificates were available for: youth leadership, agribusiness, business, child services, construction, electronics, family & community services, food service, health science, and marketing. Qualifying local programs can be registered with the state online. Upon completing the school program, students receive a state-issued certificate in their specific area of skill. The certificate indicates to employers and postsecondary educators that the student has gained skills relevant to the desired field of work.



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# Wisconsin Playbook



## Career and Technical Student Organizations

Six different Career and Technical Student Organizations (CTSOs) operate within the state. Each organization provides students with opportunities to explore career options and gain the skills needed to succeed in the new global economy. The groups sponsor chapter and national events for students within a specific area of focus such as family, business, health professionals, or farming. A Wisconsin initiative "All CTSO" coordinates efforts between the six organizations and provides a central training program. AED-affiliates can partner with CTSOs to familiarize students with opportunities in the heavy equipment sector.

## Best Practices List

### Flexibility & Responsiveness to Workforce Needs

- The state College and Workforce Readiness Council works to encourage students to pursue high-demand professions. The state legislature is very proactive and passes updated CTE-related bills each year.

### Career Services System

- There is not a specific website devoted to CTE programs. However, the state operates an online job center that anyone can use. The Youth Apprenticeship program is also highly developed and acts as a career service system for local in-demand technical jobs.

## Youth Apprenticeship Program

Wisconsin operates a state Youth Apprenticeship (YA) program as part of the statewide School-to-Work initiative. The apprenticeship may be completed as a one or two year elective program that combines academic and technical instruction with on-the-job learning.

The online portal provides tailored information for students, parents, employers, schools, and instructors. The website also features currently available programs such as the Foundation of the Wisconsin Automobile & Truck Dealers Association (WATDA) scholarship program for automotive, diesel, auto collision, and motorcycle technicians.

The YA program provides an excellent opportunity for AED-affiliates to connect with students and promote the field of heavy equipment maintenance. To join the program, employers must participate in mentor training sessions; interview and hire YA students; provide on the job training to YA students; pay the students; participate in regular progress reviews; ensure 450 hours per year of worksite training; and comply with child labor laws. To begin involvement, industry leaders should contact their local YA coordinator.

## Additional Resources

- CTE Snapshot:
  - [https://careertech.org/sites/default/files/pictures/Wisconsin\\_CTESnapshot2015.pdf](https://careertech.org/sites/default/files/pictures/Wisconsin_CTESnapshot2015.pdf)
- Wisconsin CTE
  - <http://dpi.wi.gov/cte>
- Wisconsin Youth Apprenticeship:
  - <http://dwd.wisconsin.gov/youthapprenticeship/>
- Career and Technical Student Organizations
  - <http://dpi.wi.gov/cte/ctso>



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### ECONOMIC IMPACT

By 2018, 56% of all Wisconsin jobs will require some training beyond high school, including 150,000 requiring certificates.

A 10% increase in the number of certificates or associate degrees will create:

- \$972 higher median per capita income
- 17,300 fewer unemployed
- 36,100 fewer living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## West Virginia Playbook



### RELEVANT PATHWAYS

West Virginia has developed its own 6 program areas in CTE that are crosswalked to the Career Clusters framework. It has relevant pathways in agricultural technology and machinery, automotive technicians, welding, and construction.

### RECENT FUNDING

West Virginia received an estimated \$8,428,617 in Perkins Basic State Grant funds in FY2015 and in FY2016

### KEY STATE DOCUMENTS

- HB3009 (1999) established and funded multiple workforce development programs such as the Learn and Earn Program as well as the Workforce Development Grant Program
- SB436 (2012) established the EDGE Initiative which focuses on connecting secondary and postsecondary CTE programs to ensure a smooth transition between levels.
- The Simulated Workplace Manual details the specific aspects of the Simulated Workplace program, such as the specific 12 protocols.

## State Basics

CTE in West Virginia is administered at the secondary level by comprehensive high schools and CTE centers. CTE centers also administer CTE to the postsecondary level, along with state technical and community colleges. Articulation of secondary level coursework is achieved through early entrance exams, dual credit and the EDGE program for CTE courses to participating state schools. Additionally, specific CTE courses are offered as embedded credit courses, which allow students to take CTE courses while simultaneously satisfying core academic requirements. Professional development is fostered across state and local levels, with both state and local efforts addressing curriculum integration and implementation of industry standards. West Virginia actively collaborates with the Southern Regional Education Board's High Schools and Technology Centers That Work initiative that focus on developing effective best practices that also align to industry and business standards. Additionally instructional guides have specifically designed for CTE courses and educators. The WV Council for Community and Technical College Education is focused on developing more gapless programs between the secondary and postsecondary level by developing Programs of Study with secondary schools.

## Access Points

The following are opportunities for employers to become involved. Each access point is further explored throughout the rest of this document:

- Simulated Workplace Initiative
- Employer Partnership Programs
- General and Program Area Advisory Councils

## Simulated Workplace Initiative

Noting the importance of personal development, particularly work ethics in CTE, the Simulated Workplace Initiative intends to help develop workplace skills and awareness by replicating a real-life workplace within the classroom. Specifically, a number of protocol have been developed emphasizing student-driven leadership and standards that replicate real world work environments. To that end, local businesses and industries are encouraged to assist this program by annually assessing simulated workplaces to assess the quality of these workplaces and to note where any industry standard or practice may be missing or improperly implemented. Individual requirements for businesses in this regard are minimal, while participation enables connections with students for recruitment as well as input to CTE



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# West Virginia Playbook



## Employer Partnership Programs

Primarily facilitated by the West Virginia Council for Community and Technical College Education, a number of partnership opportunities between Career and Technical Colleges (CTCs) and employers are available. Most relevant to the AED is the Tech Scholars Program, the HB3009 Workforce Development Grant and Learn and Earn Program. The Tech Scholars Program is a 50/50 employer and CTC scholarship fund matching program allows students seeking a Certificate or Associate of Applied Sciences to receive scholarship funding during their studies. Employers can utilize this program with recruitment efforts among graduating high school students to encourage recruitment (by providing an opportunity of higher educational attainment at low cost) while coordinating with students to develop a program of study that addresses specific needs of that employer. Between employment negotiations to ensure ROI on employee education and matching of funds, employers can enjoy the benefits of a skilled workforce while minimizing the financial burden of employee development. Another program is the Workforce Grant program, which allows CTCs to provide training and development to employers on a cash matching basis to help meet emerging technical needs of employers. The Learn and Earn program is a paid 50/50 employer and CTC matching contribution program that allows students to have paid co-op opportunities during their studies toward a technical degree, while earning a living (\$10/hour minimum) wage. Like the Tech Scholars program this too can be utilized with high school recruitment to recruiting and training potential employees while defraying the cost of training and educational attainment.

## General and Program Area Advisory Councils

To make programs more responsive to local needs, and to facilitate constructive discussion about the CTE programs, school districts may adopt both general and program area advisory councils. General councils serve entire or multiple counties and oversee entire CTE programs for their respective county or counties. General councils engage in long term planning of curriculum and analyzing the CTE program as a whole. Meanwhile, program area councils focus specifically on a particular program and its curriculum. Both councils are to be comprised of a majority or local businesses or employers, but program area councils are especially to represent industry businesses, so that industry-specific standards and local employment needs can be implemented into relevant CTE programs. Program area councils are particularly useful for local businesses to establish long term connections with students for recruitment.

## Additional Resources

- AdvanceCTE State Profile
  - <https://www.careertech.org/West-Virginia>
- ACTE State Profile
  - <https://www.acteonline.org/stateprofiles/>
- Simulated Workplace Manual
  - <https://wvde.state.wv.us/simulated-workplace/files/2015-simulated-workplace-manual.pdf>
- Employer Partnership Programs Information
  - <http://webhost-wp.wvnet.edu/wvctcs/wp-content/uploads/sites/15/2016/05/Workforce-1-1.pdf>
- Advisory Council Guidelines
  - <http://careertech.k12.wv.us/ctemanual/documents/CTEhandbookSectionBAdvisoryCouncils.doc>



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### ECONOMIC IMPACT

Per Advance CTE, "middle-skill jobs account for 57 percent of West Virginia's labor market, but only 48 percent of workers in West Virginia possess the required skills."

A 10 percentage point increase in the number of citizens with certificates or associates degrees would result in:

- 4,700 fewer unemployed individuals
- 13,400 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

### KEY STATE CTE CONTACTS

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# Career and Technical Education

## Wyoming Playbook



### RELEVANT PATHWAYS

Wyoming offers career pathways in Agricultural Mechanics and Heavy Equipment/Diesel Technology.

### RECENT FUNDING

In both FY2015 and FY2016, Wyoming received \$4,214,921 in Federal Perkins Grant money.

### KEY STATE LEGISLATION

In 2015, Wyoming created the Wyoming Career Readiness Council, which will increase postsecondary alignment, devise a process for using economic development data to improve CTE, and form a steering committee to make ongoing recommendations.

The state recently adopted new CTE academic standards based on the Common Core to be implemented starting in the 2017-18 school year.

The Wyoming CTE Demonstration Project Grant is a competitive grant

### State Basics

CTE in Wyoming is administered at the secondary level through comprehensive high schools, and at the postsecondary level through community colleges, the University of Wyoming, and a Bureau of Indian Affairs school. Articulation agreements are developed at the local level between secondary schools and nearby postsecondary institutions, and the University of Wyoming offers dual-enrollment courses for high school students. All seven of the state's community colleges offer free dual and concurrent enrollment courses, and have joint-degree programs and transfer agreements with the University of Wyoming. Middle-skill jobs make up 58% of jobs in Wyoming, but only 53% of the labor force possesses the required skills, resulting in a skills gap. In 2018, Wyoming will have 371,100 jobs, of which 54% will require training beyond high school and 44,000 will require a professional certificate.

### Access Points

- Work-based learning: Wyoming Department of Education CTE Grant Program
- Workforce Development: Wyoming Department of Workforce Services
- Curriculum Development: State Board of Education Content and Performance Standards

### Work-Based Learning

Work-based learning in Wyoming is developed at the district level, and the Wyoming Department of Education's CTE Grant Program challenges local school districts to develop innovative CTE curricula and programs by awarding winning proposals with grant money to implement their strategies. The stated goals of the current grant program, which runs from 2016-2018, include developing and enhancing work-based learning opportunities. All proposals are required to include at least one business or industry partner for the purposes of developing program standards and coordinating work-based learning opportunities.



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# Wyoming Playbook



## ECONOMIC IMPACT

If Wyoming increased the share of its population with an associate's degree or professional certification by 10 percentage points, the state would have:

- An \$847 higher median per capita income
- 1,300 fewer unemployed individuals
- 3,100 fewer individuals living in poverty

(Common Good Forecaster, see *State Snapshot* at [careertech.org](http://careertech.org) for assumptions)

## KEY STATE CTE CONTACTS

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## Curriculum Development

Wyoming overhauled its CTE curriculum in 2014 following a review of program standards and requirements conducted by representatives from high education, business and industry, and school districts across the state. The committee made numerous changes, including adopting Common Core State Standards (CCSS) for Literacy in Science and Technical Subjects, incorporated national standards into state content and performance standards, and developed a crosswalk to align state benchmarks to the International Society for Technology in Education (ISTE) standards. Additionally, the CTE Grant program requires districts to partner with at least one business and one institution higher education to ensure program standards receive industry approval.

## Best Practices List

### Academic Integration

Wyoming recently began implementing Career Academies that incorporate traditional academics around a CTE theme, with the first such institution opening in Campbell County. Wyoming is also working on a web portal that will house resources for CTE teachers focused on integrating STEM curriculum into CTE courses.

### Local Flexibility

The state offers templates for CTE programs of study, but local districts are allowed to adjust the basic framework to include specific CTE courses. The templates can also be used to help local districts and individual schools develop new programs of study that meet state standards.

## Workforce Development

The Wyoming Department of Workforce Services offers resources for both job seekers and employers. Specific programs and services targeted at youth (18-24) job seekers include career exploration, labor market information, and a variety of services offered under the auspices of the federal Workforce Investment and Opportunity Act (WIOA), including skills assessments, individual employment plans, and occupational skills and on-the-job training. The Department of Workforce Services also operates Workforce Centers in 23 cities across the state that provide in-person assistance to job seekers. Amenities for employers include information on federal and state labor laws, grants for workforce development and training, and employee recruitment and screening services via the Wyoming at Work job matching system.

## Additional Resources

- Wyoming CTE Grant program:
- <https://edu.wyoming.gov/wordpress/wp-content/uploads/2016/03/2016-18-CTE-Demo-Grant-Guidelines.pdf>
- Wyoming Department of Workforce Services:
- <http://www.wyomingworkforce.org>
- Wyoming at Work job matching system:
- <https://www.wyomingatwork.com/vosnet/default.aspx>
- CTE Content and Performance Standards
- <https://edu.wyoming.gov/downloads/standards/2015/2014-CVE-WyCPS-FINAL.pdf>



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