



## Career & Technical Education

How can states evolve their programs to be high-quality and industry-aligned?

February 2019



## Fast Facts



***CTE serves as the primary framework for high school career pathways across the nation.*** Even recent innovative local initiatives and school models depend on this framework and its associated investments for long-term program stability and success.



In addition to the annual federal investment (over \$1 billion for secondary students via Perkins) in CTE, 47 states provide dedicated funding to support CTE programs and instruction.



During the 2016-17 school year, 98 percent of the nation's public school districts offered CTE programs to students at the high school level. Over 8 million high school students were enrolled in CTE programs in states across the nation (over half of all students attending high school).



Nationally, graduation rates for CTE concentrators\* are about 93 percent - 10 percent higher than the national average.

\*CTE concentrators take multiple courses in a program area

# America's Skills Gap What Employers Need and Our Workforce Does Not Fulfill



**Manufacturing Workers**

**2**

million jobs currently available



**Cybersecurity Professionals**

**2**

million global jobs by 2019

**209,000**

jobs available now



**Registered Nurses**

**1.2**

million vacancies between 2014-2022



**Skilled Welders**

**290<sup>+K</sup>**

jobs currently available



**Allied Health Worker**

**UP TO 2.5**

million worker shortage by 2020



**Software Engineering**

**3**

openings in software engineering for every 1 computer science college graduate.

# Fastest-Growing Occupations

Filter by Florida Educational Level

All Education Levels

## Florida Education Levels

A: associate degree

B: bachelor's degree

HS: high school diploma or GED

M+: master's, doctoral or professional degree

NR: no formal educational credential required

PS: postsecondary non-degree award

## Additional BLS Education Levels

D: doctoral or professional degree

M: master's degree

SC: some college, no degree

## Select a Region

Statewide

Rank	Occupation Code	Occupation Title	2018 Employment	2026 Employment	Employment Growth	Employment Percent Growth	*Total Job Openings	Median Hourly Wage	FL Education Level	BLS Education Level
1	291071	Physician Assistants	5,719	7,835	2,116	37.0%	4,979	\$48.08	B	M
2	311011	Home Health Aides	28,233	38,481	10,248	36.3%	39,947	\$10.97	PS	HS
3	291171	Nurse Practitioners	9,665	12,893	3,228	33.4%	7,562	\$46.39	M+	M
4	399021	Personal Care Aides	28,325	36,677	8,352	29.5%	44,735	\$10.36	PS	HS
5	319092	Medical Assistants	55,271	70,624	15,353	27.8%	68,385	\$15.07	PS	PS
6	312021	Physical Therapist Assistants	5,594	7,126	1,532	27.4%	7,512	\$29.78	A	A
7	151132	Software Developers, Applications	37,467	47,389	9,922	26.5%	31,228	\$42.21	A	B
8	151122	Information Security Analysts	5,160	6,489	1,329	25.8%	4,423	\$39.73	PS	B
9	251071	Health Specialties Teachers, Postsecondary	11,332	14,218	2,886	25.5%	10,527	Null	M+	D
10	131161	Market Research Analysts and Marketing Specialists	30,594	37,889	7,295	23.8%	33,365	\$27.81	B	B

Source: Bureau of Workforce Statistics and Economic Research, 2018 - 2026 Employment Projections

# 16 Career Clusters with Numerous Programs of Study

## National Career Clusters Framework

Agriculture,  
Food & Natural  
Resources

Architecture &  
Construction

Arts, A/V  
Technology &  
Communications

Business  
Management &  
Administration

Education  
& Training

Finance

Government  
& Public  
Administration

Health Science

Hospitality &  
Tourism

Human  
Services

Information  
Technology

Law, Public  
Safety,  
Corrections &  
Security

Manufacturing

Marketing

Science,  
Technology,  
Engineering &  
Mathematics

Transportation,  
Distribution &  
Logistics



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## High-Quality CTE Programs:

# Non-Negotiables for State Policymakers

- 1** All promoted programs of study align with state and/or regional industry and labor market data.
- 2** Programs of study incorporate experiential learning and capstone experiences valued by industry.
- 3** Secondary programs of study vertically align with postsecondary programs.
- 4** Courses are sequential and progressive in a given program of study.
- 5** Secondary programs of study incorporate courses and exams eligible for postsecondary credit or hours where appropriate.
- 6** Course standards are robust and accurately represent the academic, technical and employability skills learners must master.
- 7** Educators receive ongoing, progressive training and professional development to ensure their instruction is reflective of course standards and current industry work environments.
- 8** Federal, state and local funding are utilized to leverage and drive programmatic changes leading to the implementation of vertically aligned education-to-career learning pathways.



## Three Important Steps

1

### Conduct a CTE Program Audit

Convene partners across K-12, postsecondary and workforce/industry to prioritize state needs. Analyze existing program offerings and outcomes to evaluate whether they reflect state economic goals.

2

### Make Necessary Changes in Program Offerings

Eliminate “dead ends,” update existing pathways to reflect industry standards, and develop new programs of study that will foster economic mobility and prosperity.

3

### Incentivize Outcomes

Provide financial incentives for success, such as student attainment of high-quality industry certifications, job placement and postsecondary attainment.



## National Leaders in Strengthening CTE Programs and Technical Training

### Tennessee

- Tennessee launched a multi-phase initiative to improve the rigor of its CTE program and align it with state workforce needs.
- TN retired over 130 obsolete or low-value courses and added 73 new courses based on industry need.
- TN created regional hubs of industry, K-12 and postsecondary partners to ensure program offerings lead to middle- and higher-wage job opportunities.
- Existing CTE programs of study are reviewed annually and must be justified based on student outcomes and business/industry needs.

### Delaware

- With employers, K-12 and postsecondary, Delaware identified 14 critical, in-demand career areas that would serve as the focus of their CTE programs and pathways.
- DE overhauled its CTE program to ensure they include work-based learning, postsecondary coursework and industry certifications.
- DE developed “model” programs of study and launched “Innovation” grants to support schools as they transition to higher-quality offerings.
- DE identified key metrics of success and regularly tracks its efforts against them.

### Texas

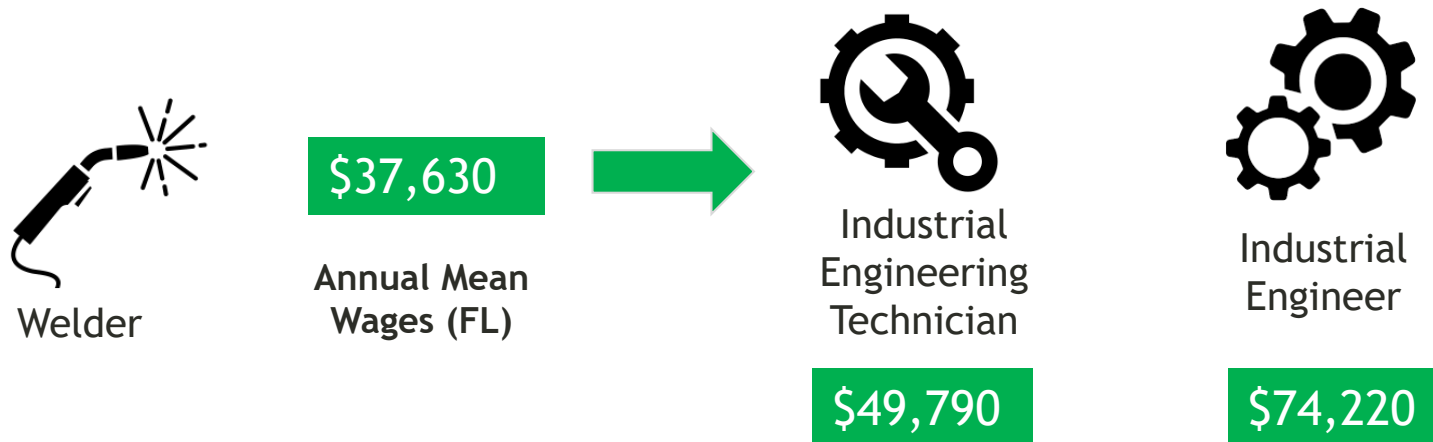
- Texas State Technical College operates under an outcomes-based funding model, whereby it receives the bulk of funding when graduates are placed in employment within 6 months of program completion.
- Additional funding is provided based on the wages graduates earn (as opposed to minimum wage).



# Career & Technical Education Pathways



Not all pathways and credentials lead to middle- and higher-wage careers with opportunities for continued advancement



Source: Bureau of Labor Statistics, May 2017 State Occupational Employment and Wage Estimates, Florida [https://www.bls.gov/oes/current/oes\\_fl.htm#35-0000](https://www.bls.gov/oes/current/oes_fl.htm#35-0000)

# Career & Technical Education Pathways



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Cosmetology

**\$31,980**

Annual Mean Wage (FL)



Pathway Transition



Next career



Computer User Support Specialist

**\$47,550**

Annual Mean Wages (FL)



Network Support Specialist

**\$58,090**



Network Administrator

**\$79,360**



Network Architect

**\$89,920**

Source: Bureau of Labor Statistics, May 2017 State Occupational Employment and Wage Estimates, Florida [https://www.bls.gov/oes/current/oes\\_fl.htm#35-0000](https://www.bls.gov/oes/current/oes_fl.htm#35-0000)

# Not All Credentials Are Created Equally



## Few Have Currency with Employers

Time Range: 2015	Number of Job Postings	Cumulative Percentage of Job Postings Requesting Certification
Job postings requesting a <b>Top 50 Certification</b>	1,912,496	67%
Job postings requesting a <b>Top 100 Certification</b>	2,231,460	78%
Job postings requesting a <b>Top 200 Certification</b>	2,499,844	88%

Source: Burning Glass Technologies

# Credentials Vary in Terms of Market Value



## CTE Programs Need Should Be Oriented around the Right Ones

Low employer demand  
for the skill or  
certification

Employers demand the  
skill but not the  
certification

Employers request the  
certification

OSHA 10 Hour

ALI - Step Ladder

Barbicide - Infection  
Control

Microsoft Office Specialist:  
Excel, Word, PowerPoint

Adobe Certified Associate:  
Photoshop, Illustrator

Automotive Service  
Excellence: 3 in 10 entry  
level auto repair postings

CompTIA A+: 1 in 5 entry  
level IT help desk roles

# Demand for Skills and Certifications



## Top 10 Certifications Earned by Florida Students (2015-16)

Industry Certification	Supply	Demand	
		Skill	Certification
Microsoft Office Specialist	18,004		
Adobe Certified Associate - Photoshop	11,568		
IC3 Spark	10,283		
Adobe Certified Associate - Illustrator	4,782		
ServSafe Manager	4,656		
Adobe Certified Associate - Dreamweaver	4,472		
Certified Internet Web - Internet Business Associate	4,398		
Adobe Certified Associate - Premiere Pro	4,363		
ICT Multimedia Essentials	3,451		
IC3 Key Applications	2,994		

*While career skills are important, the highest value credentials are those that lead directly to middle- and higher-wage employment opportunities.*

Sources: Florida DOE and Burning Glass Technologies

# Demand for Skills and Certifications



## Top 10 Certifications Earned by Oklahoma Students (2015-16)

Industry Certification	Supply	Demand	
		Skill	Certification
Automotive Service Excellence Certification	2,104		
Precision Exams - Health Science	541		
Microsoft Technology Associate	318		
FAA Aviation Mechanic Technician	282		
Adobe Certified Associate - Photoshop	192		
Phlebotomy Technician	177		
AWS Certified Welder	138		
Microsoft Office Specialist - Word	128		
NCCER - Welding Level 1	124		
CompTIA A+	99		

Sources: Florida DOE and Burning Glass Technologies



## Florida's CTE Program

- Evaluating all existing CTE program offerings against business and employer priorities, and middle- and higher-wage careers
- Streamlining existing pathways to eliminate low-quality programs/“dead ends” and promoting high-demand, high-quality pathways aligned to state economic priorities (leveraging the *Perkins V* planning process)
- Providing program funds that can help schools develop and sustain robust pathways
  - Florida is a national leader for incentive funding; additional program funding will allow schools to develop, expand and sustain high-impact programs aligned to industry needs
  - States like Texas and South Carolina invest more heavily in pathways to address issues of access and ensure sustainability (Over 1 million students in TX are CTE concentrators)
- Ensuring credentials are part of robust career pathways, not discrete skill-building experiences



# ExcelinEd

Thank You!

Foundation for Excellence in Education

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