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### Introduction

Career and technical education (CTE), once known as vocational and technical education,<sup>1</sup> prepares students for further education and careers in high-earning and high-demand industry sectors and occupations. CTE comprises programs of sequenced courses aligned with local industry needs, based on Tennessee’s regional economic and workforce development sectors. Students taking CTE courses have the opportunity to build specific skills and knowledge required to be successful in a wide variety of potential occupations.

CTE courses are approved by the State Board of Education as part of the Tennessee academic standards.

### CTE comes in many forms and serves a range of students.

In Tennessee, **CTE is available to students in middle schools, high schools, and postsecondary institutions**, including Tennessee Colleges of Applied Technology (TCATs), community colleges, and four-year colleges.

At the middle school level, CTE coursework includes introductory courses and provides students with a foundation for high school CTE courses.<sup>2</sup> At the high school level, CTE provides students with opportunities to explore a career theme or interest while learning a set of technical and employability skills that integrate into or complement their academic studies. High school students may also participate in CTE through [dual enrollment](#) or [dual credit](#) programs<sup>A</sup> as well as [work-based learning programs](#) and [pre-apprenticeship programs](#).<sup>B</sup>

In high school, many CTE programs are built specifically to lead to postsecondary programs of study or additional training after high school, which may include more specialized technical instruction. These pathways can culminate in postsecondary degrees or certificates, apprenticeships, industry credentials, or employment.<sup>3</sup>

#### Tennessee provides assistance to help students plan for and beyond high school

Beginning in grade 8 in the 2023-24 school year, a student – assisted by parents, school counselors, or other school staff – is required to begin developing a high school and beyond plan of study meant to connect their goals beyond high school to the courses and training necessary to meet the goals. School counselors are responsible for oversight of student plans, which are reviewed annually and updated as needed.

Tennessee law requires districts to administer a career aptitude assessment to students in grades 7 or 8 to help inform students’ high school plans of study. The Tennessee Department of Education (TDOE) publishes a list of approved career aptitude assessments for this purpose, some of which are free to districts. In addition, to help students in grades 6-12 explore career options, TDOE offers districts access to Defined Careers online, which guides students through career pathways based on their interests. Each student is provided a personalized list of career pathways projects and performance tasks to allow them to explore the careers in a meaningful way.

Sources: Tennessee State Board of Education, Middle Grades Policy 2.102, revised Feb. 10, 2023. Tennessee Department of Education, Approved Career Aptitude Assessments for TCA 49-6-412. Tennessee Stem Innovation Network, Defined Careers.

<sup>A</sup> “Dual enrollment” courses are postsecondary courses open to high school students who may enroll and earn college level credits while still in high school. A “dual credit course” allows high school students to earn credits for a high school course that can also be counted as postsecondary credit. Tennessee has two types of dual credit courses: statewide and local. Both types are high school courses.

<sup>B</sup> “Work-based learning” refers to sustained interactions with industry or community professionals in real workplace settings, to the extent practicable, or simulated environments at an educational institution that foster in-depth, firsthand engagement with the tasks required in a given career field, that are aligned to curriculum and instruction. Work-based learning may include experiences like internships, apprenticeships, and paid work experience. “Pre-apprenticeship programs” combine academic and technical classroom instruction with work experience and training specific to a particular career through a Registered Apprentice Program. In some cases, students can earn certifications. The Tennessee Department of Labor and Workforce Development offers employers the opportunity to review practices to determine if working conditions at a facility are conducive to employing minors in a pre-apprenticeship program. See <https://www.tn.gov/apprenticeship/pre-apprenticeship.html>.

## Tennessee CTE provides students with aligned career pathways leading to high-wage and in-demand occupations.

One goal of CTE is to reduce the gap between workforce needs and graduating students’ skills. Accordingly, school districts, TCATs, and community colleges provide CTE programming that is aligned with 16 nationally recognized career clusters. Tennessee’s career clusters encompass virtually all occupations from entry through professional levels and are aligned with the U.S. Department of Education’s CTE structure.

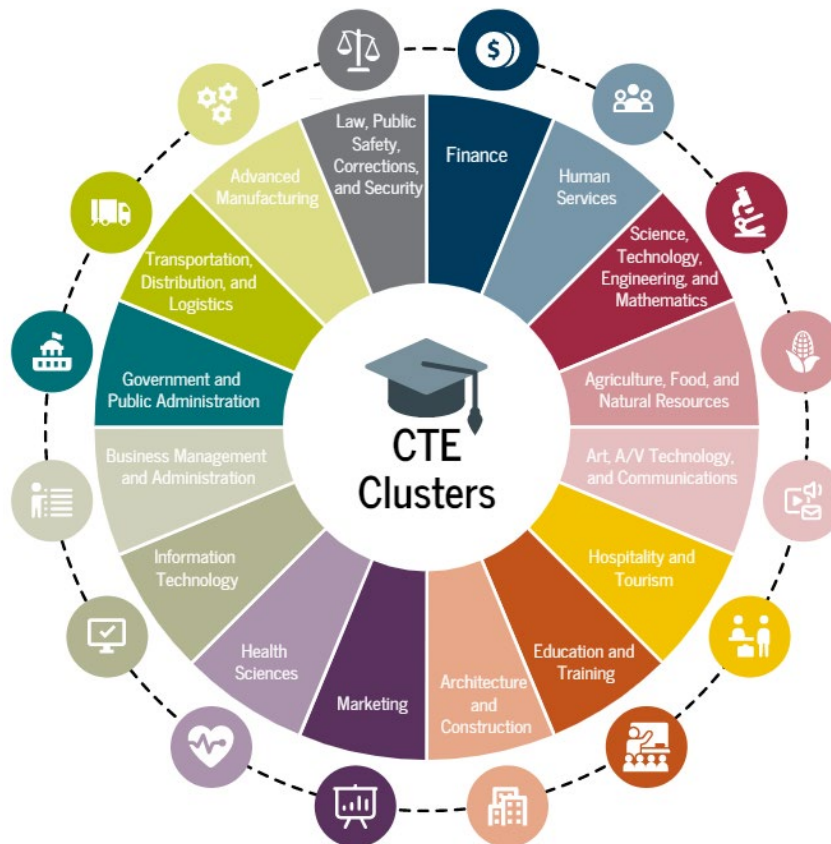
In Tennessee, the 16 career clusters<sup>c</sup> represent 56 [career pathways](#), also referred to as [programs of study](#), that reflect statewide labor, economic, and postsecondary opportunities. Alignment between workforce needs, postsecondary opportunities, and the sequencing and progression of high school students’ CTE coursework is designed to make students’ eventual transition to the workforce or postsecondary education as seamless as possible.

Students may take single CTE courses or can take courses in a specific CTE program of study, while also fulfilling all other academic requirements to move from grade to grade and obtain a high school diploma.

**CTE concentrators** are students who have completed at least two courses in a single CTE program of study.

**CTE participants** are those who have completed at least one course in a CTE program of study.

**Exhibit 1: Tennessee’s CTE programs of study are aligned with the 16 nationally recognized career clusters**



<sup>c</sup>The U.S. Department of Education developed the National Career Clusters Framework to group similar occupations and industries that depend on like sets of knowledge and skills. TDOE adopted the 16 career clusters as promoted by the USDOE and the U.S. Department of Labor.

The Tennessee Department of Education (TDOE) reviews and makes any needed adjustments to each program of study on a three-year cycle. A third of all programs of study are reviewed and, if necessary, revised annually. In conducting its review, TDOE examines labor and economic development data and the state’s postsecondary and certificate offerings. Local school districts also review programs of study on the same three-year cycle to ensure that existing programs of study provide students with career paths within their region.

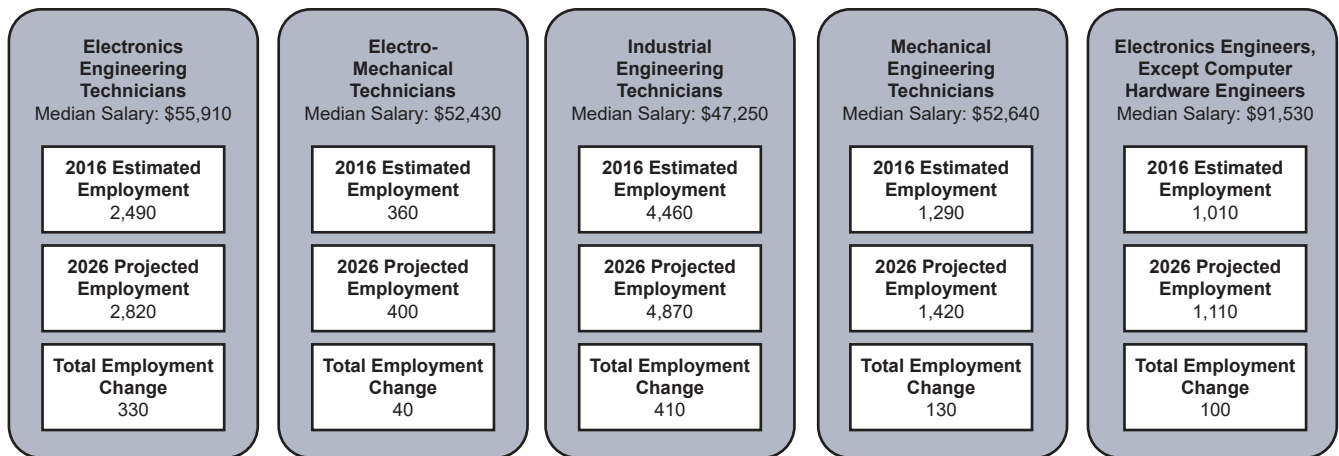
TDOE [publishes program justifications for each program of study](#),<sup>4</sup> which provide information about job outlooks for each related occupation, including median salary, projected employment, typical job locations in Tennessee, and a graphic representation of the program of study from high school through various postsecondary institutions in the state.

**Exhibit 2: Example of a pathway in Electromechanical Technology from the Advanced Manufacturing cluster program of study**

Early & Middle Grade Opportunities	Secondary Grade Opportunities	Postsecondary Opportunities	Career Opportunities
<ul style="list-style-type: none"> <li>• Career Exploration</li> </ul>	<ul style="list-style-type: none"> <li>• Principles of Manufacturing</li> <li>• Introduction to Electromechanical</li> <li>• Advanced Electromechanical Technology</li> <li>• Manufacturing Practicum</li> </ul>	<ul style="list-style-type: none"> <li>• Certificate: Industrial Maintenance</li> <li>• Associate Degree: A.A.S. Electromechanical Technology, A.A. Electrical Engineering Technology</li> <li>• Bachelor’s Degree: B.S. Electro Mechanical Engineering Technology, B.S. Industrial Technology</li> </ul>	<ul style="list-style-type: none"> <li>• Electronics Engineering Technicians</li> <li>• Electro-Mechanical Technicians</li> <li>• Industrial Engineering Technicians</li> <li>• Mechanical Engineering Technicians</li> <li>• Electronics Engineers, except computer hardware engineers</li> </ul>

**Occupation Profile:**

Electromechanical Technology is a wide-ranging field that includes maintaining and repairing mechanical systems, electrical systems, computer systems, and electronic circuits. Technicians will install, repair, and troubleshoot mechanical, electrical, electronic, and computer-controlled systems. Professionals in this field must be able to problem solve and troubleshoot by applying mathematics, design, and systems thinking, while also documenting highly technical processes in a manner that can be replicated by others. Engineers plan and design the infrastructure within the manufacturing facilities.



Source: Tennessee Department of Education, College, Career and Technical Education, Program of Study Justifications for Advanced Manufacturing, <https://www.tn.gov/education/educators/career-and-technical-education/career-clusters/cte-cluster-advanced-manufacturing.html>. See Resources for “Program of Study Marketing Materials” for the four programs of study within the Advanced Manufacturing cluster. See <https://www.tn.gov/education/educators/career-and-technical-education/career-clusters.html> for similar resources for each cluster of study.

## CTE is connected to the state’s workforce development system.

The K-12 and postsecondary education institutions in Tennessee are a part of the state’s workforce supply chain. Through **Tennessee’s State Workforce Development Board**, state agencies responsible for workforce development, including the Department of Education, advise the Governor on matters of workforce development strategy for the state.<sup>5</sup> Administered by the Tennessee Department of Labor and Workforce Development, the board represents industry, education, state and local government, and the General Assembly. Members include:

- commissioners or designees of Tennessee departments of:
  - Labor and Workforce Development
  - Human Services
  - Economic and Community Development
  - Education
- representatives of:
  - business and industry
  - the State House and Senate
  - local government
  - organized labor
  - community-based organizations
  - adult education
  - vocational rehabilitation

Among the board’s responsibilities are:

- identifying the employment, training, and vocational education needs across the state and assessing the extent to which the programs and services provided in Tennessee “represent a consistent, integrated, and coordinated approach to meeting such needs.”
- reviewing the plans of all state agencies that provide employment and training services, and providing comments and recommendations to the Governor, the General Assembly, and the state agencies on the relevancy and effectiveness of the services.

The board meets quarterly in a public setting, publishes meeting minutes online, and releases a publicly available annual report.

See Appendix A for a list of the board members.

The **Council for Career and Technical Education** serves in an advisory capacity to the State Board of Education, the Tennessee Board of Regents, the Governor, and the General Assembly. The council, established in state law, is administratively attached to the Tennessee Board of Regents.<sup>6</sup> The council’s duties, as outlined in law, include:

- advising TDOE as well as making reports to the Governor, the business community, and the general public concerning policies that could strengthen CTE, especially for students with disabilities, and initiatives the private sector could undertake to assist in modernizing CTE programs;

- analyzing and reporting on the distribution of spending for CTE in the state and on the availability of CTE activities and services in the state;
- making recommendations to TDOE on the conduct of CTE programs that emphasize the use of business concerns and labor organizations;
- assessing the distribution of financial assistance between secondary CTE programs and postsecondary CTE programs;
- making recommendations to TDOE about ways to enhance the participation of local employers and local labor organizations in providing CTE at the local level; and
- evaluating CTE program delivery services at least once every two years.

The council consists of 15 members, seven of which are members of the private sector, including business, industry, trade organizations, agriculture, and labor organizations. The Speaker of the Senate and the Speaker of the House of Representatives each appoint one state legislator. The Governor appoints the remaining 13 members of the council, including:

- seven members of the private sector
  - five representatives of business, industry, trade organizations, and agriculture
  - two representatives of labor organizations
- six representatives of secondary and postsecondary career and technical institutions, equitably distributed among the institutions, career guidance and counseling organizations within the state, and individuals who have special knowledge and qualifications with respect to the special educational and career development needs of special populations (i.e., women, the disadvantaged, the handicapped, individuals with limited English proficiency, and minorities), one of whom must represent the special education population.

See Appendix B for a list of the council's members in 2023.

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## **Appendix A: Tennessee State Workforce Development Board members**

### **Governor Bill Lee**

**Tim Berry**, Chair  
Dollywood, Pigeon Forge

**Deniece Thomas**, Commissioner  
Labor and Workforce Development

**Clarence Carter**, Commissioner  
Human Services

**Lizette Gonzalez Reynolds**, Commissioner  
Education

**Stuart McWhorter**, Commissioner  
Economic and Community Development

**Natalie Alvarez**  
Solyco Capital, Nashville

**Martha Axford**  
ABC Design, LLC, Knoxville

**Sen. Paul Bailey**  
Sparta

**Jay Baker**, Assistant Commissioner  
Labor and Workforce Development

**Jason Bates**  
Toyota Motor Manufacturing, Jackson

**Rep. Clark Boyd**  
Lebanon

**Billy Dycus**, President  
TN AFL-CIO Labor Council

**Michelle Falcon**  
Aegis Sciences Corp., Nashville

**Ben Ferguson**  
Personnel Placements Holding, Inc., Jackson



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**Bill Godwin**

BACAR Constructors, Inc., Nashville

**Marshall Graves**

Stone Door Group, Tracy City

**Ann Hatcher**

Wellpath, Nashville

**Rick Isaacson**

Servpro, Gallatin

**J. Paul Jackson**

Thor Boats, Union City

**Tim Kelly**, Mayor

Chattanooga

**Tony Niknejad**, Governor's Designee

Tennessee State Government

**Mike Pogreba**, Mayor

Humphreys County

**Stuart Price**

Lee Company, Franklin

**Barry Ray**

Legacy Senior Living, Cleveland

**Jason Schmitt**

Old Time Pottery, Murfreesboro

**Jeff Vance**

Bridgestone/Firestone, Morrison

**Kevin Vaughn**

Fire Pro, Hampshire

**Ruste Via**

Christian Family Medicine and Pediatrics, Bolivar

**Ron Wade**

HopeWorks, Memphis

**Kevin R. Wright**, Assistant Commissioner

Human Services, Nashville

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## **Appendix B: Tennessee Council for Career and Technical Education members**

**Dean Blevins**, Chairman

Postsecondary Education Representative

President Emeritus, Tennessee College of Applied Technology - Elizabethton

**Dr. Carlos Hammonds**, Vice Chairman

Private Sector Representative

High School DECA Teacher (retired)

**Clark Knight**

Secondary Education Representative

Director, College, Career and Technical Education

Bartlett City Schools

**Julie Griggs**

Post-Secondary Education Representative

Dyersburg State Community College

**T J Daniel**

Private Sector Representative

Huff and Puff Trucking

**Mike Padgett**

Private Sector (AFL-CIO) Representative

AKZO Nobel

**Dr. Nicole Cobb**

Special Populations Representative

Senior Lecturer, Vanderbilt University, Peabody College

**Kelly Piatt**

Guidance Representative

High School Counselor, Crockett County High School

**Ann Johnson**

Secondary Education Representative

Agriculture Sciences Teacher, Tipton County High School

**Vacant**

Private Sector Representative

**Vacant**

Private Sector Representative

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**Vacant**

Private Sector Representative

**Bob Cooper**

Private Sector Representative

IVEY Mechanical

**House of Representatives - Vacant**

Tennessee House Representative

**Senator Steve Southerland**

Tennessee Senate Representative

Senate District 9 (Greene, Hamblen, Cocke, Sevier, and Unicoi Counties)

## Endnotes

<sup>1</sup> Until Perkins IV was passed in 2006, the act was titled The Carl D. Perkins Vocational and Technical Education Act of 1998. In 2006, the name changed to The Carl D. Perkins Career and Technical Education Improvement Act of 2006. Congressional Research Service, Strengthening Career and Technical Education for the 21<sup>st</sup> Century Act (Perkins V): A Primer, April 15, 2022, Appendix A, p. 24, <https://sgp.fas.org/crs/misc/R47071.pdf>.

<sup>2</sup> Tennessee Department of Education, Middle School CTE Coursework, <https://www.tn.gov/education/educators/career-and-technical-education/career-clusters/cte-cluster-middle-school-cte-coursework.html>.

<sup>3</sup> USDOE, What is CTE, Data Story, <https://www2.ed.gov/datastory/cte/index.html#data-story-title>.

<sup>4</sup> See <https://www.tn.gov/education/educators/career-and-technical-education/career-clusters.html> and <https://www.tn.gov/education/educators/cte-educator-resources.html>.

<sup>5</sup> State of Tennessee Executive Order by the Governor, No. 69, Dec. 9, 2020, An Order Reconstituting the State Workforce Development Board, <https://publications.tnsosfiles.com/pub/execorders/exec-orders-lee69.pdf>.

<sup>6</sup> *TCA 49-11-201 et seq.* Since 2017, the Tennessee Council for Career and Technical Education, which was legislatively created in the early 1980s, functioned without a paid executive director or administrative assistant because of a lack of funding. Prior to 2017, the council was administratively attached to the Tennessee Department of Education. In 2017, legislation passed to move its administration to the Tennessee Board of Regents. In the process, the council's budget was reduced to \$29,400, below the \$200,000 its previous budget had been. In July 2023, the Governor and General Assembly restored and increased the council's budget to \$225,000 annually.

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