



COMMONWEALTH of VIRGINIA

Jenna Conway
Superintendent of Public Instruction

DEPARTMENT OF EDUCATION
P.O. BOX 2120
RICHMOND, VA 23218-2120

Office: (804) 225-2057
Fax: (804) 371-2099

October 1, 2026

The Honorable Luke E. Torian
Chair, House Appropriations Committee
General Assembly Building; 12th Floor
Richmond, VA 23218

The Honorable L. Louise Lucas
Chair, Senate Finance & Appropriations Committee
General Assembly Building, 13th Floor
Richmond, VA 23218

Dear Chair Torian and Lucas,

On behalf of the Board of Education and the Virginia Board of Workforce Development, I am pleased to submit the *Interim Report: Biennial Review of Career and Technical Education Courses, Pathways, and Credentials*. In response to Senate Bill 592 (2026) enacted as [§ 22.1-227.2](#), this interim progress report reflects our continued commitment to supporting educators, administrators, workforce partners, and industry stakeholders across the Commonwealth as they work to provide high-quality Career and Technical Education (CTE) opportunities for all learners aligned with Virginia's workforce and industry needs.

This report provides an analysis of course offerings, credential attainment patterns, pathway alignment, and areas identified for further study prior to the completion of the full biennial review that will be submitted on October 1, 2027.

The Virginia Department of Education remains dedicated to ensuring that CTE pathways are responsive to workforce needs, aligned with state priorities, and supportive of students' academic and career aspirations. We appreciate your continued engagement with this work and look forward to providing the final biennial report upon completion.

If you have questions or require additional information, contact Dewayne McClary, Deputy Superintendent of Innovation, Student Pathways, and Technology at dewayne.mcclary@doe.virginia.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jenna Conway', with a stylized, flowing script.

Jenna Conway
Superintendent of Public Instruction

JC/DM/aw

CC: The Honorable Dr. Jeffery Smith, Virginia Secretary of Education

INTERIM REPORT: BIENNIAL REVIEW OF CAREER AND TECHNICAL EDUCATION COURSES, PATHWAYS, AND CREDENTIALS

Code of Virginia § 22.1-227.2

Submitted to General Assembly of Virginia Chairs, Senate Committee on Education and Health and House Committee on Education, Secretary of Education and Secretary of Labor



PREFACE

Senate Bill 592 (2026) enacted as [§ 22.1-227.2](#) directs the Virginia Board of Education and the Virginia Board of Workforce Development to jointly conduct a statewide biennial review of all Career and Technical Education (CTE) courses, pathways, and industry-recognized credentials offered in Virginia’s public schools. This report represents the first comprehensive baseline analysis produced under that statutory authority and is intended to support the Commonwealth’s ongoing efforts to align K–12 educational programming with current and emerging workforce needs.

The Boards acknowledge the contributions of the Department of Education, the Virginia Office of Education Economics, the Virginia Community College System, the State Council of Higher Education for Virginia, and the Department of Workforce Development and Advancement. This collaboration ensures that CTE programs remain responsive and strategically positioned to strengthen Virginia’s talent pipeline. This interim report provides the required statewide and regional information needed to inform planning, resource allocation, and policy development, and it serves as the foundation for the biennial review process beginning July 1, 2026. The final report due October 1, 2027, will include input from employers, industry partners, career and technical student organizations, and relevant state agencies to ensure the findings reflect both statewide priorities and regional workforce realities.

TABLE OF CONTENTS

Background	8
Statewide Summary of CTE Courses, Credentials, and Pathways	9
Courses	9
Credentials	10
Pathways	11
Regional Analysis of CTE Course, Credential, and Pathway Availability	12
Recommendations	13
Conclusion	14
Appendix A	16
Courses Offered by Region	16
Credentials Offered by Region	16
Pathways Offered by Region	17
Superintendent's Region Profiles	17
Full Data Report	19

EXECUTIVE SUMMARY

This interim report prepared pursuant to [§ 22.1-227.2](#), establishes a statewide baseline assessment of career and technical education (CTE) courses, pathways, and industry recognized credentials offered in Virginia high schools. This baseline analysis will serve as a foundation for meeting the statutory requirement to ensure that offerings are aligned with industry needs and workforce demands. The data was collected from the CTE Credential Collection, Master Schedule Collection, and the Student Record Collection, for school year 2024-2025. The [Data Report- Biennial Review of Career and Technical Education Courses, Pathways, and Credentials SY 2024-25](#) identifies 520 unique courses, 367 credentials, and 82 pathways offered across public school divisions, reflecting strong statewide emphasis on career cluster and pathway courses such as information technology, health science, architecture and construction, manufacturing, and business management. Credential attainment trends further demonstrate consistent engagement with credentialing assessments, including the Workplace Readiness Skills (WRS) for the Commonwealth Examination, W!SE Financial Literacy Certification, Automotive Service Excellence (ASE) Certification Exams, National Center for Construction Education and Research (NCCER) Assessments, Microsoft Office Specialist (MOS) Exams, and CompTIA Exams, underscoring solid statewide preparation for college, career, and military pathways.

An analysis was conducted by examining the datasets containing statewide records of CTE courses, credentials, and pathways, within each school division and Superintendent's Region. Using these datasets, unduplicated counts were generated for each region to determine how many unique courses, credentials, and pathways were offered across the Commonwealth. By comparing these counts region by region, it became possible to identify patterns in program and credential access. The results reveal that while pathway availability remains consistent statewide, course and credential diversity varies significantly by region due to differences in division size, resources, and workforce composition. Region 4 leads the state in course availability, while Region 2 offers the greatest concentration of credentials; and Region 8 has lower course and credential availability despite comparable pathway access. These findings highlight opportunities for targeted expansion of credential-bearing coursework, strengthened regional collaboration, and enhanced workforce partnerships, particularly in rural or under-resourced regions.

This data ensures that students have access to CTE programs that teach real-world, in-demand skills and offer industry-recognized credentials that employers value. It also allows the state to identify regions where students may lack access to robust course or credential options and then work to close those gaps. By strengthening access, students in rural or under-resourced divisions gain the same opportunities as those in larger or better-resourced regions.

To conduct this work effectively in the coming years, the Board of Education and the Virginia Board of Workforce Development will employ a coordinated statewide review process that standardizes data collection, incorporates structured stakeholder engagement, and uses labor market data to assess program alignment and effectiveness. Overall, this two-year review provides insight to guide statewide planning and ensure Virginia's CTE system remains responsive, equitable, and aligned with evolving labor market needs.

Background

Senate Bill 592 (2026), enacted as Chapter 347 of the *Acts of Assembly*, establishes new requirements for a statewide biennial review of all CTE courses, pathways, and credentials offered to public school students in the Commonwealth of Virginia. The *Code of Virginia*, in [§ 22.1-227.2](#), directs the Board of Education and the Virginia Board of Workforce Development to jointly oversee this review beginning in the fiscal year commencing July 1, 2026, and submit by October 1, 2026, a progress report on such initial biennial review and in each odd-numbered year thereafter a report that summarizes the findings and recommendations to the Secretary of Education, the Secretary of Labor, and the Chairs of the House Committee on Education and the Senate Committee on Education and Health.

The purpose of this ongoing review is to ensure that Virginia’s CTE system remains aligned with current and emerging workforce needs, labor market trends, and recognized industry standards, thereby supporting high-quality educational programming and strengthening the Commonwealth’s workforce pipeline. This review must include an accounting and analysis of courses, pathways, and credential opportunities at the statewide level, within each public school and school division, across regional programs, and within each Superintendent’s region. As part of this process, the Boards will engage employers, industry representatives, CTE student organizations, and other key stakeholders to ensure that the review reflects current workforce perspectives and needs.

Each review will assess how well existing CTE offerings align with industry standards, workforce demand, and emerging labor market trends, as well as evaluate their effectiveness in preparing students for high-demand occupations, postsecondary education, or military enlistment. Based on these findings, the Boards will identify gaps in current offerings and recommend new or updated courses, pathways, or credentials that address both current and anticipated workforce needs. Additionally, the Boards will identify and approve any new CTE offerings that were not included in the prior biennial review, ensuring that programs remain responsive and relevant to evolving industry requirements.

By October 1, 2027, the Boards must submit a comprehensive report summarizing findings and recommendations to the Secretary of Education, the Secretary of Labor, and the Chairs of the House Committee on Education and the Senate Committee on Education and Health. This reporting requirement ensures that state leadership has access to timely and actionable information to inform policy decisions, resource allocation, and strategic planning related to CTE. Through coordinated efforts among the Board of Education, the Virginia Board of Workforce Development, the Department of Workforce Development and Advancement, the Virginia Office of Education Economics, the Department of Education, the Virginia Community College System, and the State Council of Higher Education for Virginia, the Commonwealth is

positioned to maintain a responsive and future-oriented CTE system that supports both student success and statewide economic development.

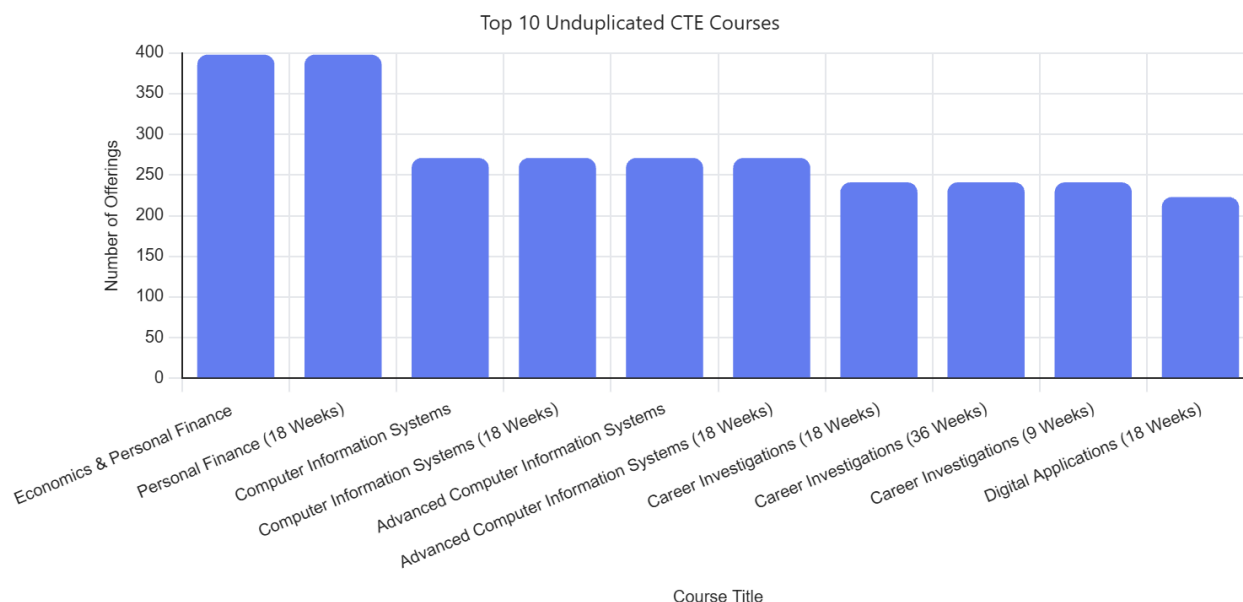
Statewide Summary of CTE Courses, Credentials, and Pathways

Courses

Virginia's CTE system offers extensive and diverse programming across the Commonwealth, with 520 unique courses, 367 unique industry-recognized credentials, and 82 distinct pathways available statewide in Virginia's middle and high schools. This analysis reflects unduplicated offerings, ensuring each course, credential, or pathway is counted once regardless of how many schools provide each offering. See Appendix A for more details.

The analysis of statewide CTE course offerings reveals several consistently high-frequency programs that anchor Virginia's career readiness pipeline. Economics & Personal Finance and its condensed version, Personal Finance (18 Weeks), represent the most widely available courses, reflecting Virginia's sustained emphasis on financial literacy as a foundational skill for all students. Similarly, Computer Information Systems—offered in both semester and year-long formats, including advanced variations, emerges as a major statewide staple, underscoring the demand for digital competency and information technology skills across multiple regions.

Courses such as Career Investigations (9, 18, and 36 weeks) appear frequently among the top offerings, suggesting that early career exploration and academic planning are widely implemented across divisions. Digital Applications (18 weeks) also ranks highly, indicating broad availability of foundational digital skills instruction. Overall, the distribution of the most commonly offered courses reflects a concentration in personal finance, information systems, and career exploration. Areas that correspond with skills and knowledge commonly associated with preparation for career pathways and general workforce expectations in the Commonwealth.



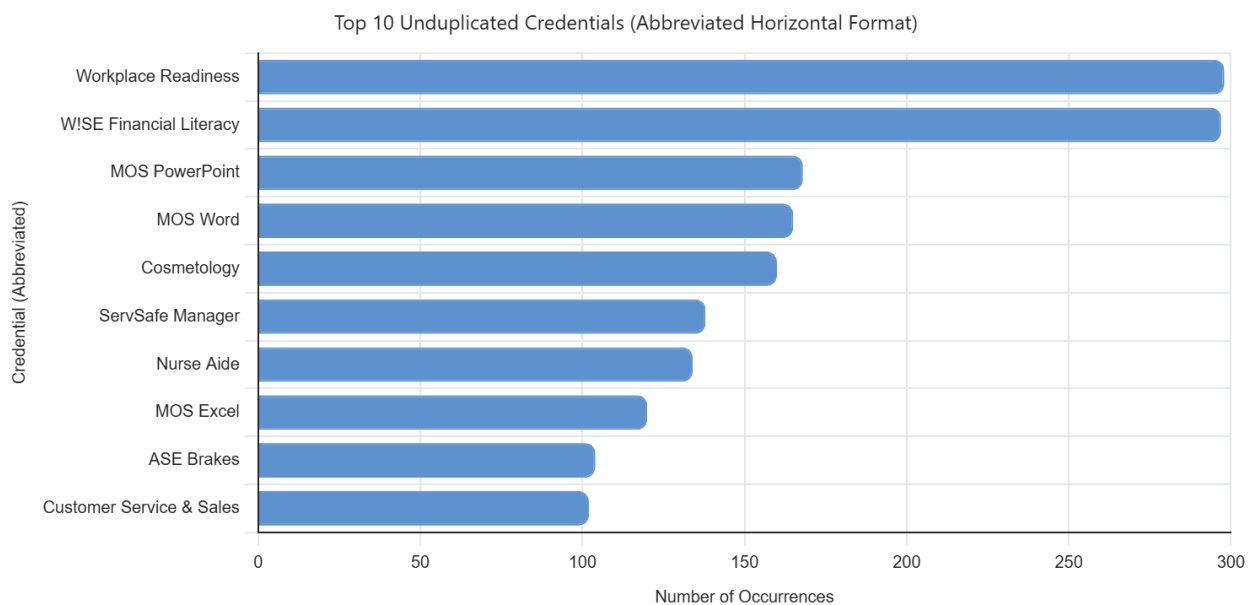
Credentials

The statewide credentialing landscape reveals strong concentration of credentials aligned with Virginia’s career readiness priorities. An industry credential is defined as a state issued professional license, an industry certification awarded by a recognized trade or professional association, or an occupational competency assessment aligned with established industry standards. The Workplace Readiness Skills for the Commonwealth Examination appears as the most frequently earned credential across divisions, underscoring its use as a universal measure of employability skills that cut across all career clusters. Closely following is the W!SE Financial Literacy Certification, signaling strong statewide commitment to financial capability as a key competency.

The presence of multiple Microsoft Office Specialist (MOS) credentials—PowerPoint, Word, and Excel—within the top tier demonstrates the persistent relevance of digital productivity skills in both academic and workforce settings. These credentials offer students a means to demonstrate technical proficiency in widely used software applications and correspond with skills commonly referenced in job listings throughout the Commonwealth.

Career specific credentials also rank highly, including Virginia Cosmetology Examination, ServSafe Manager, and the Certified Nurse Aide Examination, each reflecting strong program enrollment in health sciences, hospitality and tourism, and human services career clusters. The recurring strength of Automotive Service Excellence (ASE) Entry-Level Automotive credentials and the Customer Service & Sales Certification further highlight the demand for both technical and customer focused occupational skills across the Commonwealth.

Overall, the top 10 credential list illustrates a mix of broad employability skill development, essential digital literacy, and high-demand industry-specific training. However, we recognize that the current top 10 credentials do not fully meet our expectations for alignment with industry-recognized standards across all sectors. The Virginia Department of Education is committed to strengthening this alignment, and we are actively engaged in the development of definition and criteria for industry-recognized credentials that will guide the evaluation of both existing and future credential offerings. School divisions will continue to have the flexibility to identify and offer any CTE course, pathway, or credential approved by the Virginia Board of Education, ensuring responsiveness to local workforce needs as we work toward a more rigorous and industry-aligned credential landscape.



Pathways

The statewide analysis of CTE pathway data shows a strong alignment to Virginia’s economic and workforce priorities. The Advance CTE, National Career Clusters [Framework](#) serves as a common organizing structure for CTE programs that grouped related occupations into 17 career clusters and 83 unique pathways that contain coherent sequences of courses that aligns with industry standards, guides curriculum design, simplifies career exploration, and provides a common language that unifies stakeholders. Within this framework, pathways represent specialized educational tracks that align with specific knowledge, skills, and industry needs embedded in each cluster.

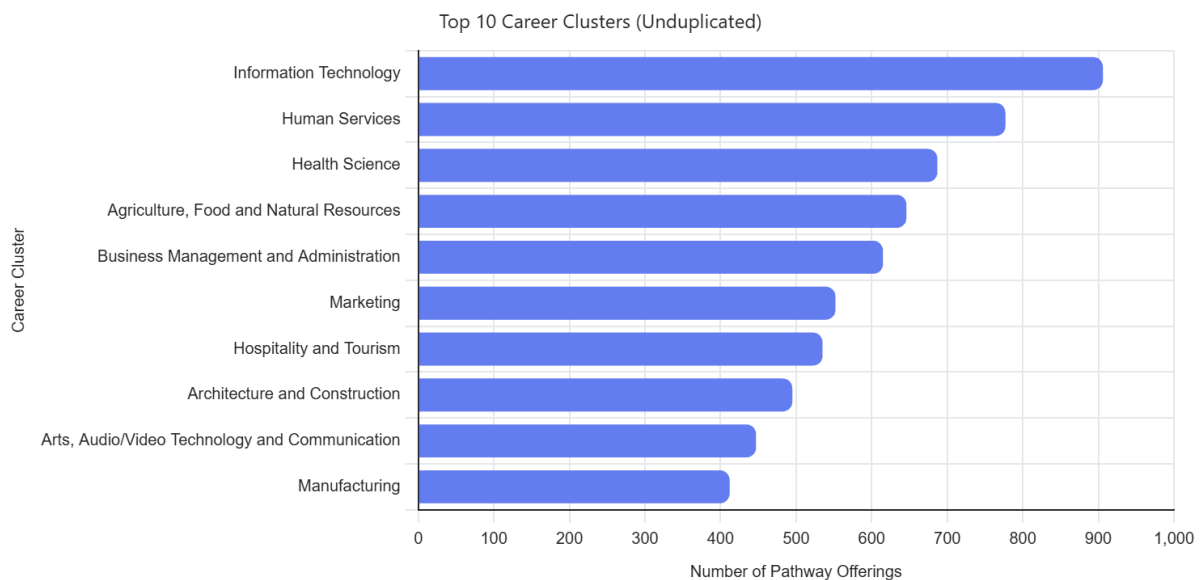
Information Technology emerges as the most represented career cluster, with 906 course sequence (pathway) offerings at 359 Virginia schools, reflecting the sustained demand for digital skills across all industries. Following this, Human Services, Health Science, and Agriculture,

Food and Natural Resources also rank highly, each surpassing 600 course sequence (pathway) offerings, demonstrating broad engagement in pathways tied to community support, health professions, and agricultural sciences.

The presence of Business Management and Administration and Marketing among the top clusters highlights the continued emphasis on foundational business skills that support a wide range of career fields. Hospitality and Tourism also shows strong representation statewide, underscoring its importance as a contributor to Virginia’s regional economies.

Clusters such as Architecture and Construction, Arts, Audio/Video Technology and Communication, and Manufacturing round out the top ten, pointing to healthy enrollment in pathways connected to the trades, creative industries, and production sectors. Together, these clusters reflect a blend of technical, human-centered, and business-oriented career preparation.

Overall, in alignment with Advance CTE, National Career Cluster Framework, the top 10 clusters illustrate a diverse CTE ecosystem, providing students with opportunities that align both with regional industry needs and statewide workforce priorities. At the same time, we recognize the need for standards that define what a coherent, market-aligned course sequence (pathway) must include. Establishing these standards will help ensure that pathways are intentionally designed, industry informed, and structured to support students in progressing toward high-value credentials and careers.



Regional Analysis of CTE Course, Credential, and Pathway Availability

A review of regional CTE course activity reveals distinct patterns shaped by regional demographic and workforce characteristics. For example, Regions 1 and 2 exhibit strong

engagement in information technology, engineering, and hospitality due to their proximity to urban centers and tourism industries. Regions 5 and 6 demonstrate high concentrations of agriculture, manufacturing, and health science pathways, aligning closely with rural workforce needs and regional employer demand. Meanwhile, Regions 3, 4, and 8 show significant activity in construction trades such as carpentry; heating, ventilation, air conditioning, and refrigeration (HVACR); welding; and automotive technology, supported by diverse regional partnerships and longstanding CTE infrastructure.

Course availability remains high across all Superintendent's regions, with each region offering foundational coursework in business, digital technologies, and career investigations. Credential administration also displays consistent statewide saturation, but Regions 4, 5, and 8 show notably higher administration rates of trade and industrial education certifications. Pathway and cluster distributions parallel these patterns, demonstrating how regional economic profiles influence CTE program design and student participation.

Overall, the data affirms that Virginia maintains a comprehensive network of CTE programming responsive to both student interests and regional workforce priorities. The top ten lists and associated visualizations illustrate strong alignment with high-demand industries, sustained investment in technical skill development, and equitable access to CTE opportunities across the Commonwealth's diverse regions. These findings reinforce the importance of continued support for credential expansion, pathway diversification, and strengthened regional workforce partnerships to ensure long-term student success and statewide economic vitality. The data also reflects the role of the CTE New Program/Course Application Process, which requires divisions to submit labor market aligned justification—supported by state and regional data—to ensure proposed CTE course/programs meet workforce needs. Additionally, the Joint Legislative Audit and Review Commission (JLARC) Virginia's Workforce Development Programs [report](#) identified gaps in regional program availability and emphasized the importance of aligning coursework with employer demand, particularly in high-demand occupations. Together, these elements reinforce that ongoing, evidence-based refinement of CTE offerings is essential for supporting long-term student success and strengthening statewide economic vitality.

Recommendations

The content of this report can be used to strengthen strategic decision-making, improve program alignment, and enhance communication about CTE priorities for students. By identifying which career clusters have the highest participation, such as Information Technology, Human Services, Health Science, and Agriculture, leaders can more effectively target resources, to expand pathways with strong student interest, and evaluate whether offerings align with regional workforce needs. The content of this report can also be used to refine program quality, strengthen partnerships, and guide equitable expansion of opportunities so that students across

the Commonwealth have access to relevant, well supported CTE experiences that prepare them for future success. Additionally, the report can be used to:

- **Expand Credential Access in Under-Resourced Regions**
Increase partnerships, professional development, and regional support for credential-bearing courses.
- **Prioritize Workforce Aligned Course Growth**
Encourage divisions to expand high-demand program areas such as information technology, health sciences, and skilled trades, using [seat time flexibility](#) to help students access multi-course sequences that lead to coherent, market-aligned pathway completion.
- **Strengthen Regional Collaboration Models**
Encourage shared regional academies or cross-division partnerships to improve equitable access in line with regional workforce needs.
- **Increase Data Transparency Across Divisions and Regions**
Maintain updated statewide CTE dashboards to help Superintendent's Regions compare offerings, identify gaps, and align with the VOEE High-Demand Occupation Dashboard. Although these dashboards improve program visibility, there is currently no mechanism to track long-term student outcomes. This remains a potential area for future collaboration with Virginia Works and other partners, though past attempts have shown the challenges of building secure and interoperable data sharing systems.

Conclusion

Statewide data reveal a foundation in pathway implementation, with all Superintendent's Regions offering a broad and uniform range of CTE pathways despite noticeable differences in course and credential availability. These variations in course and credential access align closely with regional differences in resources, workforce composition, and division size, as larger and more economically diverse regions can support a wider array of programs and industry-recognized certifications. At the same time, several regions, particularly Regions 3, 6, 7, and 8, show lower credential availability, suggesting a need for strengthened industry partnerships, targeted funding, and expanded capacity to ensure students in these areas have equitable access to workforce credentials. While statewide offerings demonstrate solid coverage of major workforce sectors, the data also highlight emerging opportunities for future expansion in fast-growing fields such as cybersecurity, advanced health sciences, and specialized skilled trades, reinforcing the importance of continued alignment between CTE programming and evolving labor market trends.

Virginia's CTE programs continue to offer a broad array of courses, credentials, and pathways designed to support students' readiness for careers, postsecondary education, and military enlistment. The 2024–2025 findings demonstrate statewide consistency in pathway

implementation and highlight opportunities to expand credential-bearing coursework and specialized programs across more rural regions to support statewide workforce alignment. This report provides the baseline statewide and regional information required under SB592 (2026) to inform the biennial review of CTE programs and guide ongoing improvement strategies.

Appendix A

Courses Offered by Region

Regions 1, 2, 4, 5, and 6 demonstrate the highest levels of course diversity, with Region 4 leading statewide at 443 unique course titles. This strong course inventory reflects widespread availability of foundational and advanced programs across digital technologies, business, agricultural science, health science, and technical trades.

Comparatively, Region 8 shows the smallest course inventory (306 unique courses), reflecting fewer participating divisions and smaller student populations. Even so, Region 8 maintains substantial offerings in agriculture, trades, business, and health sciences.

- Region 1: 416
- Region 2: 424
- Region 3: 360
- Region 4: 443
- Region 5: 405
- Region 6: 400
- Region 7: 388
- Region 8: 306

Counts represent the number of unique course titles offered within each region.

Credentials Offered by Region

Region 2 leads the Commonwealth with 214 unduplicated credential types, followed closely by Region 4 with 194 types. These regions show especially strong access to credentials in information technology, construction trades, healthcare, and automotive service excellence. Region 8 presents the fewest unduplicated credential types (54 credentials). This is likely reflective of smaller schools or limited availability of credential-bearing advanced courses. However, Region 8 continues to prioritize credentials tied to agriculture, workplace readiness, business, and culinary arts.

- Region 1: 127
- Region 2: 214
- Region 3: 115
- Region 4: 194
- Region 5: 149
- Region 6: 121
- Region 7: 138
- Region 8: 54

Counts represent the number of unique credentials offered within each region.

Pathways Offered by Region

Counts represent the number of unique course titles offered within each region.

Pathway offerings across regions are relatively balanced, with all regions falling between 68 and 81 unique pathways. Region 2 has the broadest range (81 pathways), followed by Regions 6, 7, and 8, which share similar totals (74 pathways each).

The consistency in pathway diversity suggests strong statewide alignment in CTE planning, with all regions ensuring broad access across the major career clusters. Variance emerges in cluster representation rather than total pathway count, potentially reflecting regional workforce priorities.

- Region 1: 72
- Region 2: 81
- Region 3: 71
- Region 4: 69
- Region 5: 68
- Region 6: 74
- Region 7: 74
- Region 8: 74

Counts represent the number of unique pathways offered within each region.

Superintendent's Region Profiles

A review of unduplicated regional counts reveals meaningful variation in the scale and diversity of CTE programming across Virginia's Superintendent's Regions. Region 4 stands out with the highest number of unique courses, indicating extensive program offerings across multiple clusters and strong instructional capacity. Regions 1, 2, 5, and 6 also maintain broad course diversity, reflecting large or multi-division regions with established CTE programming.

Credential access shows its greatest concentration in Region 2, followed closely by Region 4, underscoring these regions' emphasis on industry-recognized skill validation and alignment with high-demand workforce sectors. In contrast, Region 8 reports significantly fewer unduplicated credentials and course titles, which is consistent with smaller division sizes and more rural program structures; however, Region 8 maintains pathway diversity comparable to most other regions. Pathway counts across all regions remain relatively balanced, suggesting statewide commitment to offering career exploration in all major clusters regardless of regional size or economic profile. Collectively, these patterns highlight strong statewide consistency in pathway access, regional concentrations of course and credential breadth tied to workforce and population factors, and overall alignment with Virginia's CTE priorities.

Region 1 – Central Virginia

Offers a relatively high number of unique courses and pathways, demonstrating balanced access across major program areas. Credential availability supports career readiness in business, STEM disciplines, and early childhood education fields.

Region 2 – Tidewater

Provides the highest credential availability statewide and supports nearly the full breadth of identified pathways. This region demonstrates strong industry engagement and robust infrastructure supporting credential-bearing coursework.

Region 3 – Northern Neck

Maintains a moderate set of courses and pathways. Credential offerings suggest targeted programming aligned with regional economic sectors, particularly agriculture and skilled trades.

Region 4 – Northern Virginia

Offers the largest number of unique CTE courses statewide, reflecting the size of divisions, availability of specialized programs, and access to industry partnerships. Credentials and pathways are also highly diverse.

Region 5 – Valley

Course and credential offerings fall near statewide averages. Pathway availability reflects strong program coherence, supported by established offerings in health sciences, agriculture, and business.

Region 6 – Western Virginia

Shows consistent pathway availability and moderate course offerings. Credential availability mirrors local workforce priorities, with notable offerings in advanced manufacturing and energy-related programs.

Region 7 – Southwest

Demonstrates strong pathway consistency and competitive course numbers. Credential access reflects developing industries and regional training partnerships.

Region 8 – Southside

Offers fewer courses and credentials overall compared with other regions. Despite this, pathway options remain consistent, indicating structured planning and sequencing despite smaller program catalogs.

Full Data Report

Data Report- Biennial Review of Career and Technical Education Courses, Pathways, and
Credentials SY 2024-25