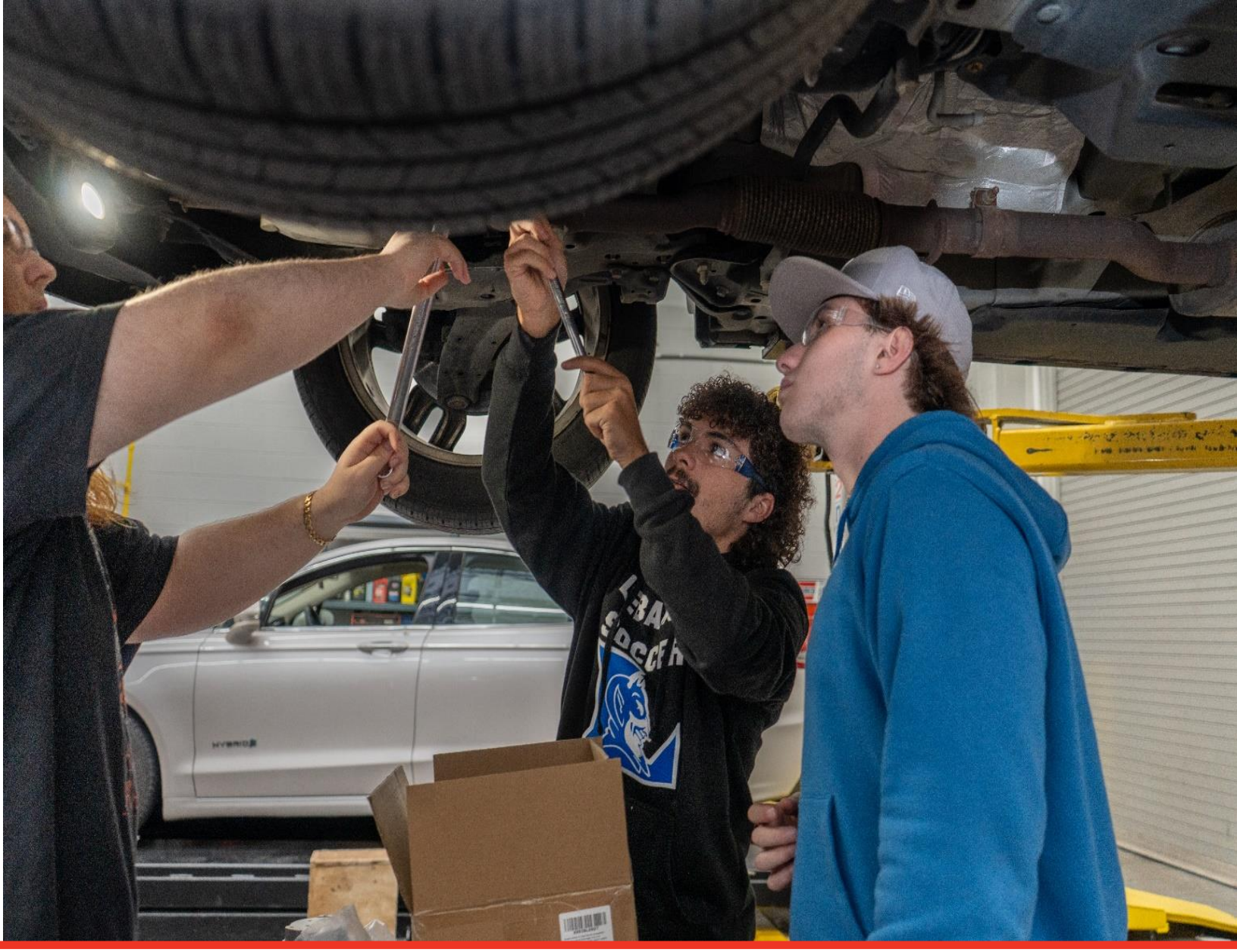


Transportation Cluster

Comprehensive Career Cluster Review (C3R)

College, Career & Technical Education | Spring 2024

TN Department of Education

Comprehensive Career Cluster Review (C3R)

The comprehensive career cluster review (C3R) is the intentional review of career and technical education (CTE) programs and the course standards within each program to ensure students have up-to-date course standards aligned to postsecondary and career needs. Each career cluster is reviewed annually with input from the state-wide advisory councils comprised of postsecondary partners, industry partners, and secondary CTE teachers. Advisory council meetings allow the stakeholders to engage in dialogue and discuss current needs, emerging trends, and necessary course revisions to course standards. Advisory council input could potentially lead to new or retired programs of study, new courses or retired courses, or revised course standards within existing courses, if necessary. The collaborative engagement ensures students receive instruction on the most up-to-date and relevant course standards, so they are prepared for postsecondary and the workforce.

Transportation

The Transportation career cluster prepares students for careers involving automotive repair, automotive collision repair, and aviation. Automotive careers require you to have a strong mechanical ability. The nation's dependence on automobiles means the job demand will remain strong in the automotive fields. Aviation programs prepare students for a range of possible careers, such as pilots, aircraft engineers, air traffic control specialists, aircraft mechanics, or airport support workers. This career cluster contains three programs of study (POS): Automotive Maintenance and Light Repair, Collision Repair, and Aviation Flight. The number of concentrators continues to increase as indicated below.

School Year	Transportation Concentrators
2020-21	4,244
2021-22	4,186
2022-23	5,178

Automotive Maintenance and Light Repair

2023-24 Program of Study	Year 1	Year 2	Year 3	Year 4
Automotive Maintenance and Light Repair	Maintenance & Light Repair I (C20H09)	Maintenance & Light Repair II (C20H10)	Maintenance & Light Repair III (C20H11) -or- **Dual Enrollment** Automotive Maintenance & Light Repair I (C20H01) -or- **Dual Enrollment** Automotive Maintenance & Light Repair II (C20H21)	Maintenance & Light Repair IV (C20H12) -or- **Dual Enrollment** Automotive Maintenance & Light Repair III (C20H22) -or- **Dual Enrollment** Automotive Maintenance & Light Repair IV (C20H30) -or- **WBL** Automotive Maintenance and Light Repair Career Practicum (C20H34)

Description

The *Automotive Maintenance and Light Repair* POS prepares students for entry into the automotive service industry. Automobile service technicians apply technical knowledge and skills to repair, service, and maintain all types of automobiles. The program includes instruction in brake systems, electrical systems, engine performance, engine repair, suspension and steering, automatic and manual transmissions and drive trains, and heating and air condition systems.

Automotive Maintenance and Light Repair is a field that includes basic care and maintenance of vehicles. Automotive Technicians usually work in car repair shops or service departments of car dealerships. Work includes a wide variety of maintenance and repairs including diagnosing problems, changing oil, checking fluid levels, rotating tires, replacing worn parts, and repairing engines and drive trains. They also inspect and fix a vehicle's electrical system. The increased complexity of vehicles has increased the need for trained technicians.

This POS is aligned with the SkillsUSA career and technical student organization (CTSO).

Job Outlook

Job demand for automotive service technicians remains good in Tennessee. Trained automotive technicians are in high demand. Those without formal training or experience will face fierce competition in the industry. There are opportunities for career advancement into customer service and supervisory positions. The continual growth of the number of vehicles combined with the number of workers retiring ensures demand for automotive service technicians.

As seen in Figure 1, the demand for all occupations related to Automotive Maintenance and Light Repair continues to grow. According to the Bureau of Labor Statistics, jobs for Bus and Truck Mechanics and Diesel Engine Specialists in Tennessee are projected to grow 14 percent from 2020 to 2030[1], faster than the average for all occupations. The Supply and Demand Report lists Automotive Service Technicians and Mechanics as an occupation in demand in nine (9) of the state's regions[2]. Demand for Tire Repairers and Changers is projected to grow 5 percent from 2020 to 2030[3]. Demand for Automotive Body and Related Repairers is projected to grow 12 percent from 2020 to 2030[4]. Over 1,800 openings for Automotive Service Technicians and Mechanics are projected each year through 2030[5]. Many of these openings are expected because of the need to replace workers who retire from the workforce.

[1] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

[2] Tennessee Higher Education Commission, Supply and Demand Report, Retrieved March 1, 2024, from https://www.tn.gov/thec/research/supply-and-demand.html

[3] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

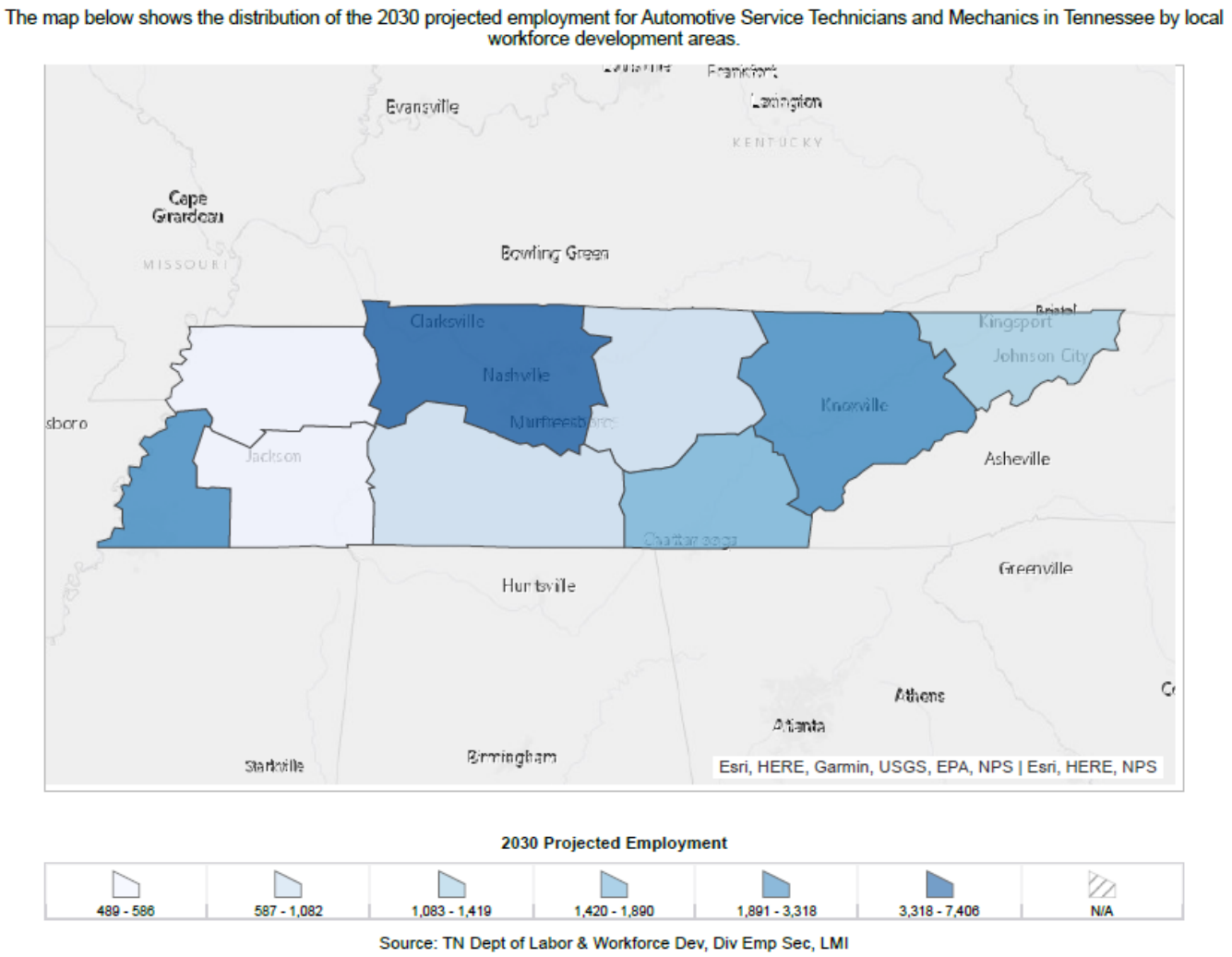
[4] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

[5] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

Figure 1. Tennessee employment projections for Automotive Maintenance and Light Repair related occupations with positive job openings projected for 2020-2030 according to the Tennessee Higher Education Commission, Supply and Demand Report.[2]

Occupation	SOC Code	Employment (2020)	Projected Employment (2030)	Projected Growth (2020-2030)	Projected Annual Job Openings (2020-2030)
Automotive Service Technicians and Mechanics	49-3023	17,790	18,450	4%	1,830
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	6,330	7,200	14%	700
Automotive Body and Related Repairers	49-3021	4,040	4,510	12%	440
First-Line Supervisors of Mechanics, Installers, and Repairers	49-1011	9,410	10,720	14%	1,020
Installation, Maintenance, and Repair Workers	49-9099	7,100	8,290	17%	900
Mobile Heavy Equipment Mechanics	49-3042	2,740	3,180	16%	330
Tire Repairers and Changers	49-3093	2,600	2,720	5%	320
Transportation, Storage, and Distribution Managers	11-3071	3,750	4,470	19%	380
Automotive and Watercraft Service Attendants	53-6031	3,240	3,400	5%	460
Helpers - Installation, Maintenance, and Repair Workers	49-9098	2,220	2,500	13%	330

Figure 2. 2030 Projected employment for Automotive Service Technicians and Mechanics in Tennessee, Jobs4TN.[6]



[6] Jobs4Tn.gov. *Occupation Profile*. Retrieved February 1, 2024, from https://jobs4tnwfs.tn.gov/vosnet/Default.aspx

Program of Study Level

The Tennessee Investment in Student Achievement (TISA) provides direct funding for student participation in career and technical education (CTE) programs to drive college and career readiness outcomes. Pursuant to Tenn. Code Ann. § 49-3-105(c)(2), a direct allocation amount will be generated for each student membership in a CTE program based on the rule:

1. The level of the program
    - Programs shall be designated into one (1) of three (3) levels.
    - Programs will be classified into three (3) levels based on alignment to wage-earning potential indicators and additional resources required to support the program if aligned to wage-earning potential occupational pathways.
2. The student progression in coursework through the program

*The state budget keeps all programs funded at $5,000 for 2024-25 school year funding. See the CTE TISA Programs of Study Leveling Guide 2024-25 for the TISA funding formula for program of study levels.

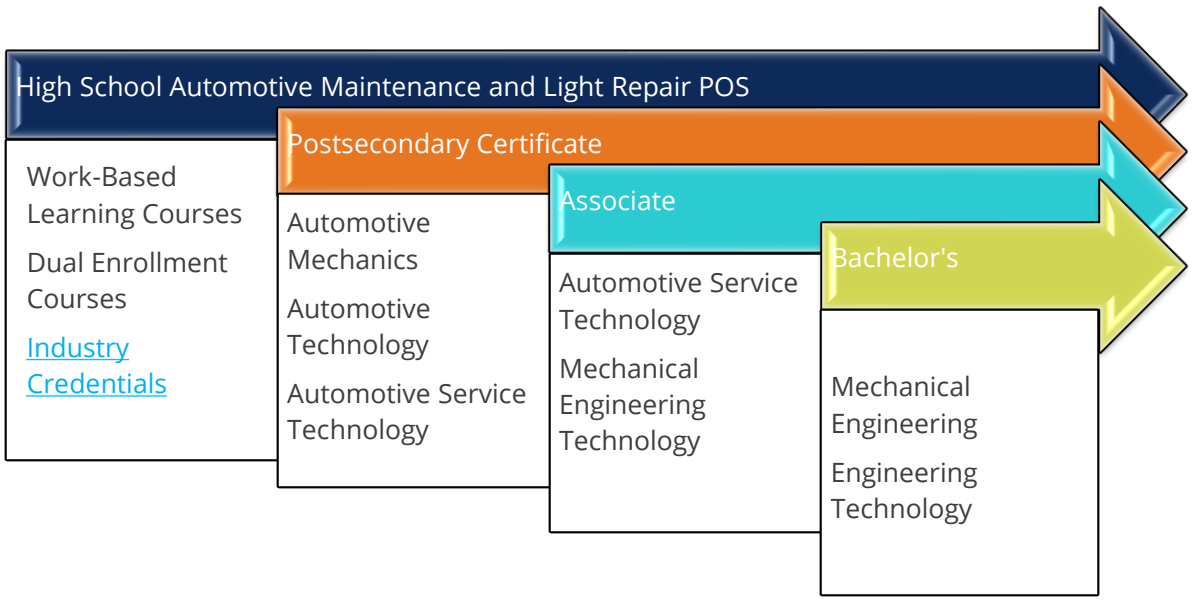
Automotive Maintenance and Light Repair Program: Level 2

Postsecondary Opportunities

The Automotive Maintenance and Light Repair pathway offers opportunities to funnel students into careers at a variety of education levels. Industry credentials earned in high school and work experience through work-based learning courses can lead to employment immediately after high school. There are early postsecondary opportunities at the high school level that lead to certificate programs at the state's network of Tennessee Colleges for Advanced Technology (TCATs). As shown in the table below, the wage level increase with a certificate from a TCAT is significant. Lincoln College of Technology and Chattanooga State also offer certificates. Community colleges in Tennessee offer a variety of associate-level degrees that continue to increase wage-earning potential. Lincoln College of Technology, Southwest TN, Northeast State, and Pellissippi State offer associate-level degrees for this program. Advanced training at the bachelor's level opens even more doors for students for better prospects in higher-wage engineering occupations. Tennessee Tech and the University of Tennessee at Knoxville offer bachelor's degrees for this program.

The figure illustrates which opportunities are available for a student graduating from a Tennessee Automotive Maintenance and Light Repair program in high school.

Figure 3. Outlines the related career opportunities and training necessary for each program of study. Students may acquire hours transferable to a postsecondary institution for the completion of a degree.



Additional opportunities are offered at multiple postsecondary institutions as indicated in the Tennessee Department of Labor and Workforce Dashboard.

High School Diploma	Certificate	Associate	Bachelor's
• Tire Repairers and Changers **($30,705)** • Installation, Maintenace, and Repair Workers **($27,932)**	• Automotive Service Technicians **($43,709)** • Bus and Truck Mecahnics and Diesel Engine Specialists **($54,360)**	• Mechanical Engineering Technicians **($60,132)** • Automotive Engineering Technicians **($61,990)**	• Mechanical Engineers **($93,649)** • Automotive Engineers **($96,310)**

Current Secondary Landscape

Over the past three years, the number of schools offering Automotive Maintenance and Light Repair has slightly increased. In 2022-23, 11,104 students were enrolled in Automotive Maintenance and Light Repair courses, which was a significant increase from previous years. This program may not be appropriate for schools that do not have the supporting labor market data. The figures below show the open enrollment analysis for the 2020-21 through the 2022-23 school year and the course enrollment in the Automotive Maintenance and Light Repair program.

Figure 1. Open Enrollment Analysis

School Year	Schools Offering Automotive Maintenance and Light Repair
2020-21	114
2021-22	109
2022-23	118

Figure 5. Student Enrollment by Course

School Year	Maintenance & Light Repair I	Maintenance & Light Repair II	Maintenance & Light Repair III	Maintenance & Light Repair IV	Dual Enrollment Courses
2020-21	4,524	2,517	1,554	519	692
2021-22	4,918	2,697	1,484	442	1,195
2022-23	5,002	2,444	1,339	459	1,860

Automotive Collision Repair

2023-24 Program of Study	Year 1	Year 2	Year 3	Year 4
Automotive Collision Repair	Introduction to Collision Repair (C20H20)	Collision Repair: Non-Structural (C20H13)	Collision Repair: Painting & Refinishing (C20H14) -or- **Dual Enrollment** Automotive Collision Repair I (C20H02) -or- **Dual Enrollment** Automotive Collision Repair II (C20H23)	Collision Repair: Damage Analysis, Estimating, and Customer Service (C20H19) -or- **Dual Enrollment** Automotive Collision Repair III (C20H24) -or- **Dual Enrollment** Automotive Collision Repair IV (C20H31) -or- **WBL** Automotive Collision Repair Career Practicum (C20H35)

Description

The *Automotive Collision Repair* POS prepares students for entry into careers as automotive body repairers. Automotive body repairers restore, refinish, and replace vehicle bodies and frames. Content emphasizes customer service skills, proper use of tools and equipment, safety, shop operations, engine fundamentals, damage analysis, cost estimation, painting and refinishing, and structural and non-structural repair in a hands-on environment.

Automotive Collision Repair is a field that includes restoring, refinishing, and replacing vehicle bodies and frames. Automotive body repairers repair vehicles damaged in an accident. They use a wide array of tools to cut off old parts, connect new parts to the car, fill holes, repair scratches, dents, and dings, and make the car look as good as new. Repair technicians work indoors in ventilated body shops. Repair technicians sometimes work in awkward and cramped positions, and their work can be physically demanding.

This program is aligned with the SkillsUSA CTSO.

Job Outlook

Job demand for automotive body repairers remains good. Openings for Automotive Body and Related Repairers in Tennessee continue to grow. Employment growth will be driven by increased demand for automotive work. Those without formal training or experience will face fierce competition in the industry. There are opportunities for career advancement into customer service and supervisory positions. The continual growth of the number of vehicles combined with the number of workers retiring ensures demand for automotive body repairers.

As seen in Figure 1, the demand for all occupations related to Automotive Collision Repair continues to grow. According to the Bureau of Labor Statistics, jobs for Automotive Body and Related Repairers in Tennessee are projected to grow 12 percent from 2020 to 2030[7], faster than the average for all occupations. The Supply and Demand Report lists Automotive Body and Related Repairers as an occupation in demand in eight (8) of the state's regions[8]. Demand for Coating, Painting, and Spraying Machine Setters, Operators, and Tenders is projected to grow 18 percent from 2020 to 2030[9]. Demand for Bus and Truck Mechanics and Diesel Engine Specialist is projected to grow 14 percent from 2020 to 2030[10]. Over 1,800 openings for Automotive Service Technicians and Mechanics are projected each year through 2030[11]. Many of these openings are expected as a result of the need to replace workers who retire from the workforce.

[7] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

[8] Tennessee Higher Education Commission, Supply and Demand Report, Retrieved March 1, 2024, from https://www.tn.gov/thec/research/supply-and-demand.html

[9] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

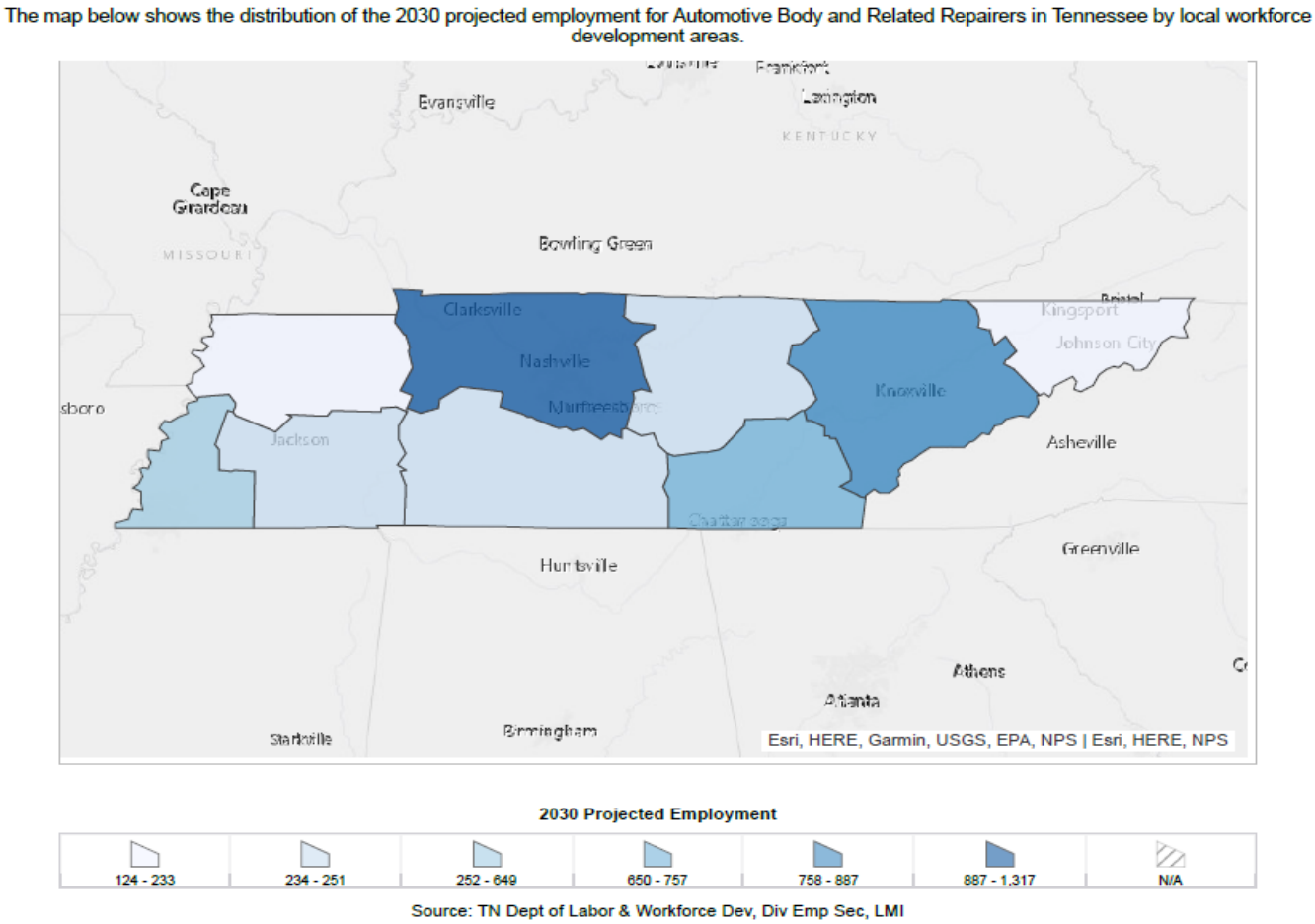
[10] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

[11] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

Figure 1. Tennessee employment projections for Automotive Collison Repair-related occupations with positive job openings projected for 2020-2030 according to the Tennessee Higher Education Commission, Supply and Demand Report.[8]

Occupation	SOC Code	Employment (2020)	Projected Employment (2030)	Projected Growth (2020-2030)	Projected Annual Job Openings (2020-2030)
Automotive Body and Related Repairers	49-3021	4,040	4,510	12%	440
Automotive Service Technicians and Mechanics	49-3023	17,790	18,450	4%	1,830
First-Line Supervisors of Mechanics, Installers, and Repairers	49-1011	9,410	10,720	14%	1.020
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	6,330	7,200	14%	700
Transportation, Storage, and Distribution Managers	11-3071	3,750	4,470	19%	380
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	51-9124	3,180	3,760	18%	400
Automotive and Watercraft Service Attendants	53-6031	3,240	3,400	5%	460
Mobile Heavy Equipment Mechanics	49-3042	2,740	3,180	16%	330
Metal Workers and Plastic Workers	51-4199	2,760	2,840	3%	290
Motor Vehicle Operators	53-3099	1,350	1,710	27%	280

Figure 2. 2030 Projected employment for Automotive Body and Related Repairers in Tennessee.[6]



Program of Study Level

TISA provides direct funding for student participation in CTE programs to drive college and career readiness outcomes. Pursuant to T.C.A. § 49-3-105(c)(2), a direct allocation amount will be generated for each student membership in a CTE program based on the rule:

1. The level of the program
    - Programs shall be designated into one (1) of three (3) levels.
    - Programs will be classified into three (3) levels based on alignment to wage-earning potential indicators and additional resources required to support the program if aligned to wage-earning potential occupational pathways.
2. The student progression in coursework through the program

*The state budget keeps all programs funded at $5,000 for 2024-25 school year funding. See the CTE TISA Programs of Study Leveling Guide 2024-25 for the TISA funding formula for program of study levels.

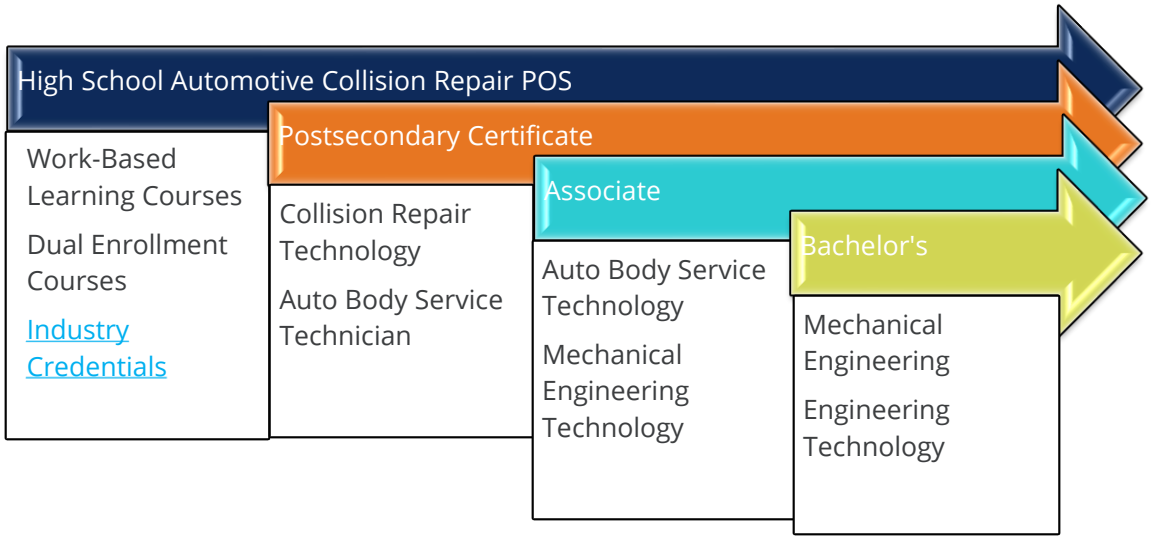
Automotive Collision Repair Program: Level 2

Postsecondary Opportunities

The Automotive Collision Repair pathway offers opportunities to funnel students into careers at a variety of education levels. Industry credentials earned in high school and work experience through work-based learning courses can lead to employment immediately after high school. There are early postsecondary opportunities at the high school level that lead to certificate programs at the state's network of Tennessee Colleges for Advanced Technology (TCATs). As shown in the table, the wage level increase with a certificate from a TCAT is significant. Northeast State also offers a certificate. Community colleges in Tennessee offer a variety of associate degrees that continue to increase wage-earning potential. Lincoln College of Technology, Moore Tech, Southwest TN, and Pellissippi State offer associate degrees for this program. Advanced training at the bachelor's level opens even more doors for students for better prospects in higher-wage engineering occupations. Tennessee Tech and the University of Tennessee at Knoxville offer bachelor's degrees for this program.

The figure illustrates which opportunities are available for a student graduating from a Tennessee Automotive Collision repair program in high school.

Figure 3. Outlines the related career opportunities and training necessary for each program of study. Students may acquire hours transferable to a postsecondary institution for the completion of a degree.



Additional opportunities are offered at multiple postsecondary institutions as indicated in the Tennessee Department of Labor and Workforce Dashboard.

High School Diploma	Certificate	Associate	Bachelor's
• Coating, Painting, and Spraying Machine Setters, Operators, and Tenders **($29,217)** • Metal Workers and Plastic Workers **($27,439)**	• Automotive Body and Related Repairers **($45,779)** • Automotive Service Technicians **($43,709)**	• Mechanical Engineering Technicians **($60,132)** • Automotive Engineering Technicians **($61,990)**	• Mechanical Engineers **($93,649)** • Automotive Engineers **($96,310)**

Current Secondary Landscape

Over the past three years, the number of schools offering Automotive Collision Repair has remained steady. In 2022-23, 2,047 students were enrolled in Automotive Collision Repair courses, which are approximately the same as previous years. This program may not be appropriate for schools that do not have the supporting labor market data. The figures below show the open enrollment analysis for the 2020-21 through the 2022-23 school year and the course enrollment in the Automotive Collision Repair program.

Figure 2. Open Enrollment Analysis

School Year	Schools Offering Automotive Collision Repair
2020-21	30
2021-22	25
2022-23	29

Figure 5. Student Enrollment by Course

School Year	Introduction to Collision Repair	Collision Repair: Non-Structural	Collision Repair: Painting & Refinishing	Collision Repair: Damage Analysis, Estimating, and Customer Service	Dual Enrollment Courses
2020-21	876	632	333	51	121
2021-22	1,009	475	311	60	301
2022-23	999	419	277	40	312

Aviation Flight

2023-24 Program of Study	Year 1	Year 2	Year 3	Year 4
Aviation Flight	Introduction to Aerospace (C20H15)	Aviation I: Principles of Flight (C20H16)	Aviation II: Advanced Flight (C20H18) -or- **Dual Enrollment** Aviation Flight I (C20H03) -or- **Dual Enrollment** Aviation Flight II (C20H28)	Unmanned Aircraft Systems Pilot (C20H29) -or- **Dual Enrollment** Aviation Flight III (C20H32) -or- **Dual Enrollment** Aviation Flight IV (C20H33) -or- **WBL** Aviation Flight Career Practicum (C20H36)

Description

Aviation Flight is a program intended to prepare students to be successful in a range of aviation careers, such as pilots, aircraft engineers, air traffic control specialists, or aircraft technicians. Course content covers the knowledge and skills of all aspects of flight needed to pass the Federal Aviation Administration (FAA) Private Pilot written exam, including aircraft structures, flight environment, procedures and regulations, aerodynamics of flight, judgment training, navigation, communications, and more. Upon completion of this POS, students will be prepared to take the FAA Private Pilot written exam and will be able to advance more quickly through the training hours typically required to solo in an aircraft.

Aviation is a wide-ranging field that includes flying aircraft, maintaining aircraft, guiding aircraft, and caring for the infrastructure that supports aircraft. Air transportation workers' occupation groups include airline pilots, copilots, navigators, commercial pilots, aerospace engineers, aircraft service technicians, avionics technicians, air traffic controllers, flight engineers, airport managers, and first-line supervisors of technicians. Unmanned aircraft (drones) have added numerous additional options and occupations to the Aviation industry.

This program is aligned with the SkillsUSA CTSO.

Job Outlook

Job demand for Aviation is strong with a wide variety of needs. The changing nature of technology, with the addition of the need for licensed drone pilots, means a wider variety of Aviation occupations. Many occupations are supportive in nature and in terms of flying an airplane. The continual growth of the Aviation industry combined with the number of workers retiring ensures demand for a wide variety of Aviation professions.

As seen in Figure 1, the demand for all occupations related to Aviation continues to grow. According to the Bureau of Labor Statistics, jobs for Airline Pilots, Copilots, and Flight Engineers in Tennessee are projected to grow 17 percent from 2020 to 2030[12], much faster than the average for all occupations. Demand for Commercial Pilots is projected to grow 27 percent from 2020 to 2030[13]. Demand for Aerospace Engineers is projected to grow 18 percent from 2020 to 2030[14]. Over 100 openings for Aircraft Mechanics and Service Technicians are projected each year through 2030[15]. Many of these openings are expected as a result of the need to replace workers who retire from the workforce.

[12] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

[13] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

[14] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

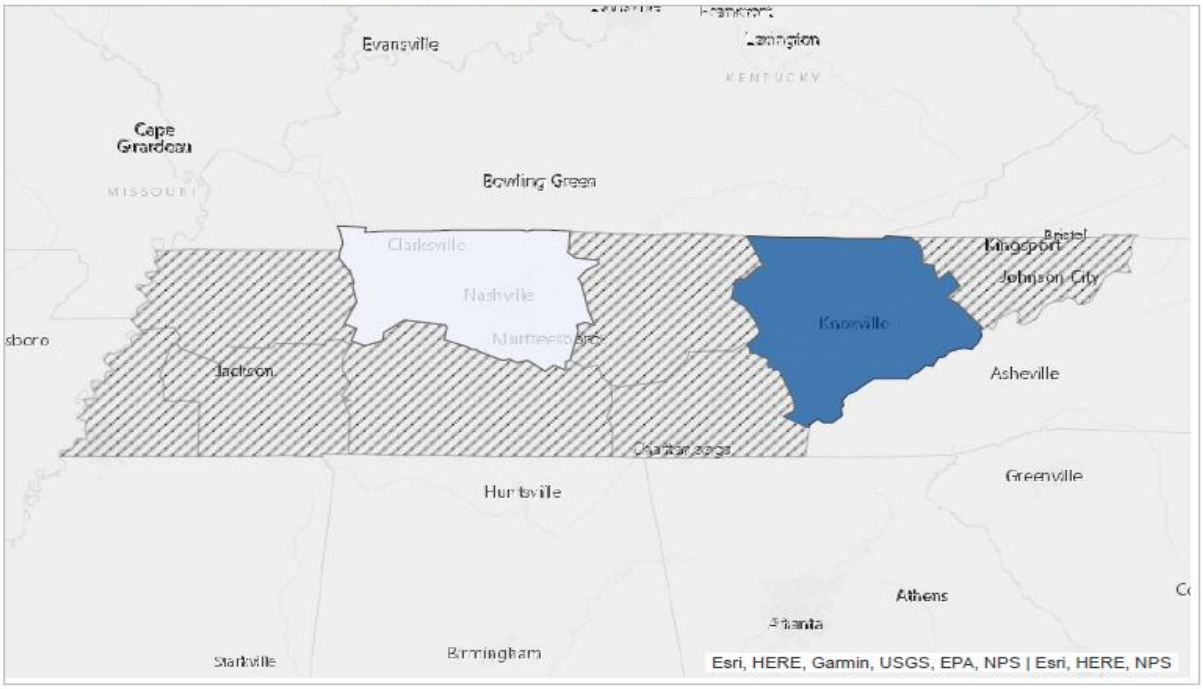
[15] Bureau of Labor Statistics, U.S. Department of Labor, O*NET Online, Retrieved February 1, 2024, from https://www.onetonline.org/link/summary/47-2031.00

Figure 1. Tennessee employment projections for Aviation related occupations with positive job openings projected for 2020-2030 according to the Tennessee Higher Education Commission, Supply and Demand Report.[2]

Occupation	SOC Code	Employment (2020)	Projected Employment (2030)	Projected Growth (2020-2030)	Projected Annual Job Openings (2020-2030)
Airline Pilots, Copilots, and Flight Engineers	53-2011	290	340	17%	40
Commercial Pilots	53-2012	370	470	27%	50
Aerospace Engineers	17-2011	390	460	18%	30
Aircraft Mechanics and Service Technicians	49-3011	1,280	1,350	6%	110
Laborers and Freight, Stock, and Material Movers, Hand	53-7062	93,790	116,920	25%	16.090
First-Line Supervisors of Mechanics, Installers, and Repairers	49-1011	9,410	10,720	14%	1,020
Transportation, Storage, and Distribution Managers	11-3071	3,750	4,470	19%	380
Conveyor Operators and Tenders	53-7011	940	1,050	12%	130
Air Traffic Controllers	53-2021	680	690	2%	70
Aerospace Engineering and Operations Technologists and Technicians	17-3021	160	200	25%	20

Figure 2. 2030 Projected employment for Commercial Pilots in Tennessee.[6]

The map below shows the distribution of the 2030 projected employment for Commercial Pilots in Tennessee by local workforce development areas.



2030 Projected Employment

160 | 218 | N/A

Source: TN Dept of Labor & Workforce Dev, Div Emp Sec, LMI

Program of Study Level

TISA provides direct funding for student participation in CTE programs to drive college and career readiness outcomes. Pursuant to T.C.A. § 49-3-105(c)(2), a direct allocation amount will be generated for each student membership in a CTE program based on the rule:

1. The level of the program
    - Programs shall be designated into one (1) of three (3) levels.
    - Programs will be classified into three (3) levels based on alignment to wage-earning potential indicators and additional resources required to support the program if aligned to wage-earning potential occupational pathways.
2. The student progression in coursework through the program

*The state budget keeps all programs funded at $5,000 for the 2024-25 school year funding. See the CTE TISA Programs of Study Leveling Guide 2024-25 for the TISA funding formula for program of study levels.

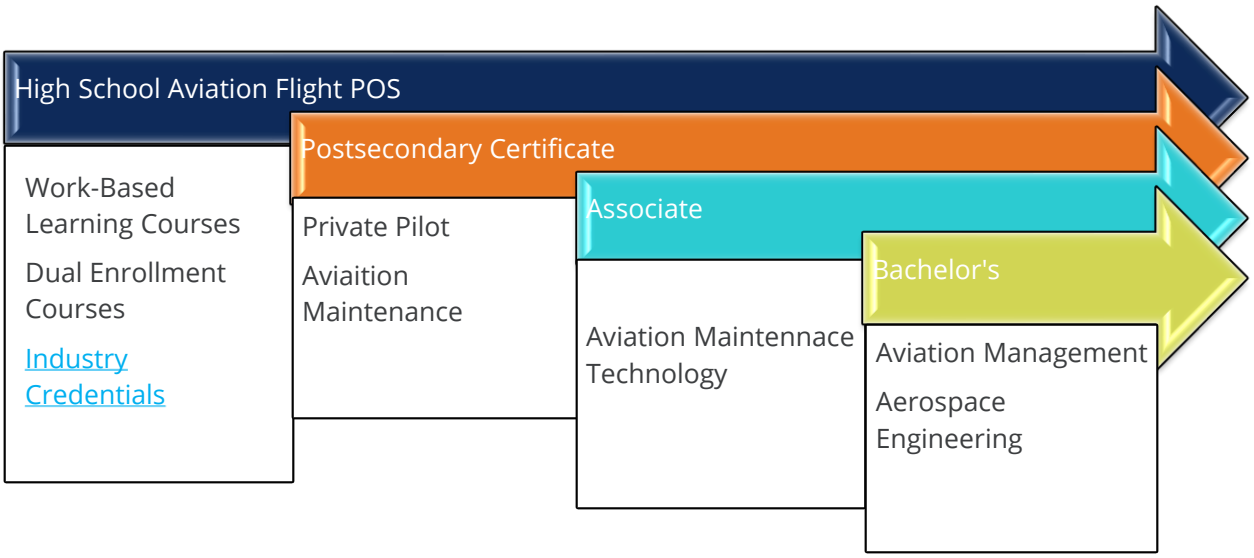
Aviation Flight Program: Level 2

Postsecondary Opportunities

The Aviation Flight pathway offers opportunities to funnel students into careers at a variety of education levels. Flight experience earned in high school can lead to employment immediately after high school. Numerous public and private locations offer postsecondary certificates related to Aviation. A local airport would have a list of reputable providers. Aviation Maintenance certificates are available at TCAT Memphis, TCAT Nashville, and TCAT Morristown. As shown in the table below, the wage increases with additional education. Community colleges in Tennessee offer associate-level degrees that continue to increase wage-earning potential. Advanced training at the bachelor's level opens even more doors for students for better prospects in higher-wage engineering occupations. Middle Tennessee State University (MTSU), Tennessee State University, and the University of Tennessee at Knoxville offer bachelor's degrees for this program.

The figure illustrates which opportunities are available for a student graduating from a Tennessee Aviation Flight program in high school.

Figure 3. Outlines the related career opportunities and training necessary for each program of study. Students may acquire hours transferable to a postsecondary institution for the completion of a degree.



Additional opportunities are offered at multiple postsecondary institutions as indicated in the Tennessee Department of Labor and Workforce Dashboard.

High School Diploma	Certificate	Associate	Bachelor's
• Laborers and Freight, Stock, and Material Movers **($24,914)**	• Aircraft Mechanics and Service Technicians **($78,712)**	• Commericial Pilots **($100,201)**	• Aerospace Engineers **($114,859)**
• Conveyor Operators and Tenders **($28,220)**	• Aerospace Engineering and Operations Technicians **($75,450)**	• Air Traffic Controllers **($77,580)**	• Airline Pilots, Copliots, and Flight Engineers **($211,790)**

Current Secondary Landscape

Over the past three years, the number of schools offering Aviation flights has increased from 7 to 12. In 2022-23, 1,317 students were enrolled in Aviation Flight courses, which was an increase from previous years. This program may not be appropriate for schools that do not have the supporting labor market data. The figures below show the open enrollment analysis for the 2020-21 through the 2022-23 school year and the course enrollment in the Aviation Flight program.

Figure 3. Open Enrollment Analysis

School Year	Schools Offering Aviation Flight
2020-21	7
2021-22	11
2022-23	12

Figure 5. Student Enrollment by Course

School Year	Introduction to Aerospace	Aviation I: Principles of Flight	Aviation II: Advanced Flight	Unmanned Aircraft Systems Pilot
2020-21	369	229	132	32
2021-22	572	214	102	40
2022-23	848	279	137	53

References

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Career One Stop, U.S. Department of Labor, Fastest-Growing Careers, Online at https://www.careeronestop.org/Toolkit/Careers/fastest-growing-careers.aspx

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Recommendations

The following includes recommendations for course standards changes to be presented to the State Board of Education (SBE) for consideration in August 2024.

Program of Study	Course	Recommendations
Automotive Maintenance and Light Repair	Maintenance & Light Repair I	• Add a standard to highlight the importance of utilizing the engineering design process while working with a team to complete a project. • Add a standard to highlight the importance and integration of CTSOs in the classroom. • Add a standard to emphasize the growing need for data analysis in all career areas. • Add a standard to point out the prominence of Artificial Intelligence.
Automotive Collision Repair	Introduction to Collision Repair	• Add a standard to highlight the importance of utilizing the engineering design process while working with a team to complete a project. • Add a standard to highlight the importance and integration of CTSOs in the classroom. • Add a standard to emphasize the growing need for data analysis in all career areas. • Add a standard to point out the prominence of Artificial Intelligence.
Aviation Flight	Introduction to Aerospace	• Add a standard to highlight the importance of utilizing the engineering design process while working with a team to complete a project. • Add a standard to highlight the importance and integration of CTSOs in the classroom. • Add a standard to emphasize the growing need for data analysis in all career areas. • Add a standard to point out the prominence of Artificial Intelligence.
Automotive Maintenance and Light Repair	Maintenance & Light Repair II	Add a standard to focus on data analysis in Automotive Maintenance.
Automotive Collision Repair	Collision Repair: Non-Structural	Add a standard to focus on data analysis in Automotive Collision Repair.

Aviation Flight	Aviation I: Principles of Flight	Add a standard to focus on data analysis in Aviation.

2025-26 Proposed Programs and Courses

Automotive Maintenance and Light Repair

2025-26 Program of Study	Year 1	Year 2	Year 3	Year 4
Automotive Maintenance and Light Repair	Maintenance & Light Repair I (C20H09)	Maintenance & Light Repair II (C20H10)	Maintenance & Light Repair III (C20H11) -or- **Dual Enrollment** Automotive Maintenance & Light Repair I (C20H01) -or- **Dual Enrollment** Automotive Maintenance & Light Repair II (C20H21)	Maintenance & Light Repair IV (C20H12) -or- **Dual Enrollment** Automotive Maintenance & Light Repair III (C20H22) -or- **Dual Enrollment** Automotive Maintenance & Light Repair IV (C20H30) -or- **Dual Enrollment** Automotive Maintenance & Light Repair V (C20H37) -or- **Dual Enrollment** Automotive Maintenance & Light Repair VI (C20H38) -or- **Dual Enrollment** Automotive Maintenance & Light Repair VII (C20H39) -or- **Dual Enrollment** Automotive Maintenance & Light Repair VIII (C20H40) -or- **Dual Enrollment** Automotive

				Maintenance & Light Repair IX (C20H41) -or- **Dual Enrollment** Automotive Maintenance & Light Repair X (C20H42) -or- **WBL** Automotive Maintenance and Light Repair Career Practicum (C20H34)

Automotive Collision Repair

2025-26 Program of Study	Year 1	Year 2	Year 3	Year 4
Automotive Collision Repair	Introduction to Collision Repair (C20H20)	Collision Repair: Non-Structural (C20H13)	Collision Repair: Painting & Refinishing (C20H14) -or- **Dual Enrollment** Automotive Collision Repair I (C20H02) -or- **Dual Enrollment** Automotive Collision Repair II (C20H23)	Collision Repair: Damage Analysis, Estimating, and Customer Service (C20H19) -or- **Dual Enrollment** Automotive Collision Repair III (C20H24) -or- **Dual Enrollment** Automotive Collision Repair IV (C20H31) -or- **Dual Enrollment** Automotive Collision Repair V (C20H43) -or- **Dual Enrollment** Automotive Collision Repair VI (C20H44) -or-

				Dual Enrollment Automotive Collision Repair VII (C20H45) -or- **Dual Enrollment** Automotive Collision Repair VIII (C20H46) -or- **Dual Enrollment** Automotive Collision Repair IX (C20H47) -or- **Dual Enrollment** Automotive Collision Repair X (C20H48) -or- **WBL** Automotive Collision Repair Career Practicum (C20H35)

Aviation Flight

2025-26 Program of Study	Year 1	Year 2	Year 3	Year 4
Aviation Flight	Introduction to Aerospace (C20H15)	Aviation I: Principles of Flight (C20H16)	Aviation II: Advanced Flight (C20H18) -or- **Dual Enrollment** Aviation Flight I (C20H03) -or- **Dual Enrollment** Aviation Flight II (C20H28)	Unmanned Aircraft Systems Pilot (C20H29) -or- **Dual Enrollment** Aviation Flight III (C20H32) -or- **Dual Enrollment** Aviation Flight IV (C20H33) -or- **Dual Enrollment** Aviation Flight V (C20H49) -or-

				Dual Enrollment Aviation Flight VI (C20H50) -or- **Dual Enrollment** Aviation Flight VII (C20H51) -or- **Dual Enrollment** Aviation Flight VIII (C20H52) -or- **Dual Enrollment** Aviation Flight IX (C20H53) -or- **Dual Enrollment** Aviation Flight X (C20H54) -or- **WBL** Aviation Flight Career Practicum (C20H36)

In 2025-26, students will have the option to add courses from the Business, Marketing, and Digital Technology programs to supplement their learning.