

Workforce-Focused Dual Enrollment Pathways in North Carolina:

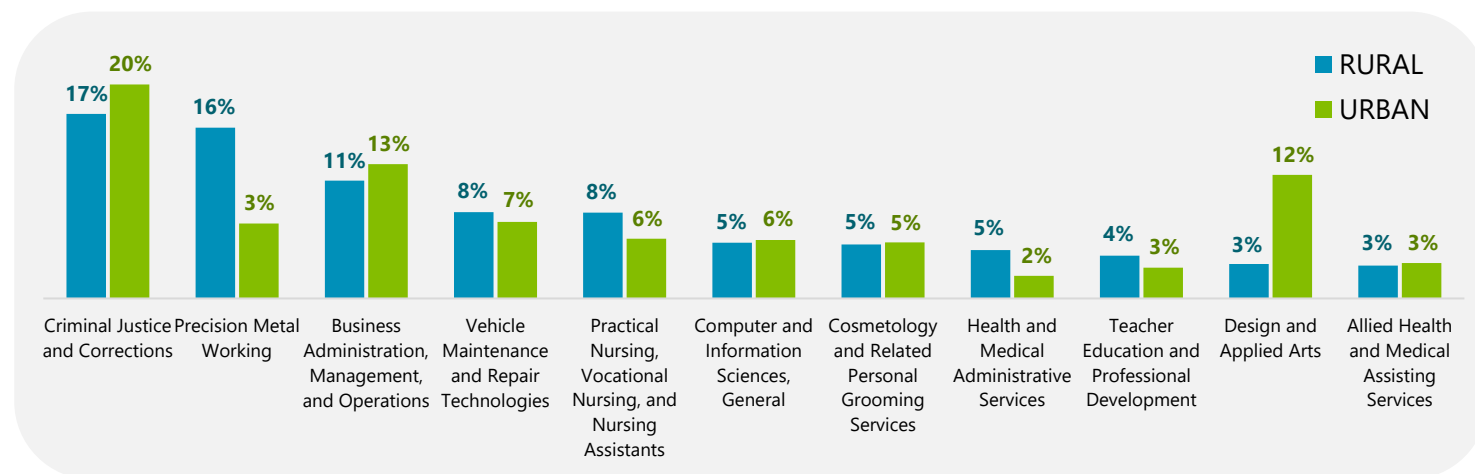
PARTICIPATION AND OUTCOMES FOR RURAL STUDENTS

The Career and Technical Education (CTE) Dual Enrollment Pathway, under North Carolina's Career and College Promise program, enables high school students to take college classes designed to lead to a certificate, diploma, or workforce-focused major. This brief presents participation and credential attainment rates for the 11 most popular CTE program areas in rural settings.

WHO PARTICIPATES IN CTE DUAL ENROLLMENT PATHWAYS IN RURAL AREAS AND HOW DOES THAT COMPARE TO URBAN AREAS?

- **Nearly 10 percent of high school students in rural areas of North Carolina actively pursued a CTE dual enrollment pathway** of any type over the decade from 2012 to 2022—more than twice the share as in urban areas of the state.
- **Participation in some program areas varied by locale.** Rural students were more than twice as likely as urban students to pursue precision metal working (e.g., welding) and health and medical administrative services (which was not among the top 11 program areas in urban areas). Rural students were one-fourth as likely to pursue design and applied arts. Mechanical engineering technician programs were among the top 11 program areas in urban areas but not rural ones. These participation rate patterns by locale were similar for both earlier and more recent cohorts of students.

SHARE OF CTE DUAL ENROLLMENT PATHWAYS STUDENTS BY PROGRAM AREA



- **Program area selection varied by sex** in rural areas (displayed in the table) as well as statewide. Female students accounted for a larger share of participants in cosmetology, teaching, and the three health-related program areas we analyzed, while male students made up more of the precision metal working and vehicle repair groups. Differences were less stark by economically disadvantaged status or race or ethnicity, in both rural and urban areas.

SHARE OF RURAL CTE DUAL ENROLLMENT PATHWAYS STUDENTS BY DEMOGRAPHIC GROUP

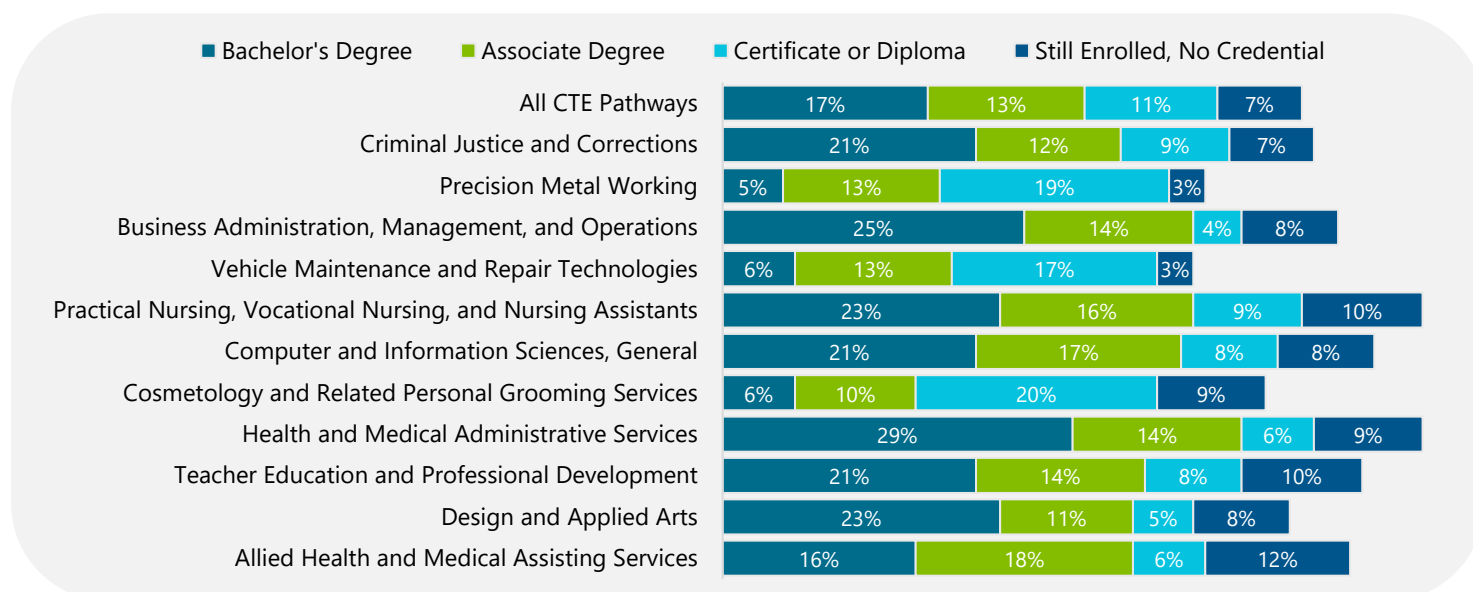
Program Area Description	N	% Female	% Male	% EDS	% RE-LR
All CTE Pathways Program Areas	36,405	47%	53%	46%	23%
Criminal Justice and Corrections	6,326	54%	46%	47%	25%
Precision Metal Working	5,855	5%	95%	42%	14%
Business Administration, Management, and Operations	4,042	54%	46%	42%	29%
Vehicle Maintenance and Repair Technologies	2,957	6%	94%	49%	11%
Practical Nursing, Vocational Nursing, and Nursing Assistants	2,944	91%	9%	48%	26%
Computer and Information Sciences, General	1,911	35%	65%	42%	24%
Cosmetology and Related Personal Grooming Services	1,852	97%	3%	58%	33%
Health and Medical Administrative Services	1,657	86%	14%	47%	33%
Teacher Education and Professional Development	1,466	93%	7%	52%	33%
Design and Applied Arts	1,183	52%	48%	43%	33%
Allied Health and Medical Assisting Services	1,125	88%	12%	50%	30%

NOTES: EDS = economically disadvantaged; RE-LR = racial and ethnic groups with limited representation (Black, Hispanic, American Indian, Multiracial); Ns reflect totals across the nine cohorts of students in the study; program areas identified by 4-digit Classification of Instructional Programs (CIP) code; three health-related program areas (within the 2-digit CIP code 51) ranked among the top 11 by 4-digit CIP code.

WHAT CREDENTIALS DO RURAL STUDENTS IN THE MOST POPULAR CTE DUAL ENROLLMENT PROGRAM AREAS EARN?

- About 41% of all CTE pathways students in rural areas went on to earn some type of postsecondary credential within six years of high school. An additional 7% remained enrolled in postsecondary education at that point.
- The typical highest credential varied by program area: short-term certificates or diplomas were most common for cosmetology, vehicle maintenance, and precision metal working. In allied health, an associate degree was the most common highest credential. A bachelor's degree was the most common highest credential for all other fields, with the highest shares of students earning a bachelor's among health and medical administrative services, business administration, practical nursing, and design and applied arts students. Nearly three-quarters of rural CTE pathways students who earned a bachelor's degree did so at a University of North Carolina System institution.
- Some students earned enough college credits to earn a short-term certificate while they were still in high school. More than 10 percent of rural participants in our sample did so in precision metal working (20%); vehicle maintenance (16%); computer and information sciences (13%); and criminal justice and corrections (11%).
- The broad patterns in credential attainment by program area were similar in urban and rural areas and by student subgroup; however, almost across the board, bachelor's degree receipt was less common in rural areas and for economically disadvantaged students. There was no consistent pattern by sex or race or ethnicity. Overall, about 46% of CTE pathways students in urban areas earned a postsecondary credential within six years of high school.

HIGHEST POSTSECONDARY CREDENTIAL EARNED WITHIN 6 YEARS OF HIGH SCHOOL, RURAL CTE PATHWAYS STUDENTS



About the Study: This study built upon the [research team's prior analyses](#) of North Carolina's Career and College Promise program. In this study, we narrowed our focus to the most frequently taken CTE dual enrollment pathway program areas in rural settings, identified by the first four digits of the Classification of Instructional Programs (CIP) code associated with a student's dual enrollment record in North Carolina Community College System data. We excluded "other" health professions programs from the analysis since most students in that pathway never took a CTE course. We used National Center for Education Statistics locale codes to identify rural students as those in rural or town locale schools and urban students as those in city or suburb locales. The analysis included nine cohorts of entering 11th graders from 2012 to 2020 and followed them through 2022-2023 using data from the NC Community College System, the UNC System, and the National Student Clearinghouse. Students must have participated in at least one CTE dual enrollment course in 11th or 12th grade to be considered as having actively pursued their CTE pathway. The student outcomes presented in this brief are descriptive only and do not compare pathway participants to non-participants.

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