

Workforce-Focused Dual Enrollment Pathways in North Carolina:

LABOR MARKET OUTLOOK 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 labor market information for jobs that use skills developed by the 11 most popular CTE program areas in rural settings and considers whether jobs related to each program area are more concentrated in rural or urban parts of state.

IN NORTH CAROLINA, WHAT IS THE STATEWIDE MARKET FOR JOBS THAT USE SKILLS DEVELOPED BY CTE DUAL ENROLLMENT PATHWAYS?

We used a program area-to-occupation crosswalk from the modernized version of The National Career Clusters® Framework to identify the jobs that draw upon skills developed by each CTE dual enrollment program area. The table summarizes characteristics of the jobs statewide that link to each program area and provides examples of specific occupations.

- **Which fields have the *fastest job growth*?** Among jobs for which popular CTE program areas offer preparation, the fastest projected growth over the next decade is for jobs in computer and information sciences (25%) and allied health and medical assisting services (20%). The slowest projected growth is for jobs connected with precision metal working (5%).
- **Which fields have the *most job openings*?** Job growth rate does not necessarily track with the total number of jobs in the field. The most job openings (including both new positions and replacing job leavers) are expected in occupations linked to business administration, management, and operations (~55,000 per year), health and medical administrative services (~22,000 per year), and teacher education and professional development (~17,000 per year).
- **What are the *salaries and educational requirements* for these jobs?** Salaries vary widely by field, with the highest salaries in jobs linked to the computer and information sciences and business administration, management, and operations program areas. In general, fields with larger shares of workers with at least a bachelor's degree pay more, on average, while fields where the vast majority of workers have no more than a sub-baccalaureate credential tend to pay less.

CHARACTERISTICS OF JOBS RELATED TO POPULAR CTE DUAL ENROLLMENT PROGRAM AREAS IN RURAL AREAS, NORTH CAROLINA STATEWIDE LABOR MARKET DATA

Program Area Description	Projected # Annual Openings (2022-32)	Projected Net Job Growth (2022-32)	Typical Starting Salary (2022)	Average Annual Salary, All Workers (2022)	% Workers Without a Bachelor's (Nationally)	Examples of Occupations Linked to the Program Area
Criminal Justice and Corrections	13,962	9%	\$47,988	\$81,930	55%	Security Guards; Police and Sheriff's Patrol Officers
Precision Metal Working	5,386	5%	\$37,019	\$52,273	95%	Welders, Cutters, Solderers, and Brazers; Machinists
Business Administration, Management, and Operations	55,482	11%	\$54,707	\$107,200	49%	General and Operations Managers; First-Line Supervisors of Retail Sales Workers
Vehicle Maintenance and Repair Technologies	8,076	10%	\$38,001	\$60,409	92%	Automotive Service Technicians and Mechanics; Bus and Truck Mechanics and Diesel Engine Specialists
Practical Nursing, Vocational Nursing, and Nursing Assistants	10,464	11%	\$33,902	\$43,521	91%	Nursing Assistants; Licensed Practical and Licensed Vocational Nurses
Computer and Information Sciences, General	13,521	25%	\$73,614	\$127,244	24%	Software Developers; Computer Systems Analysts
Cosmetology and Related Personal Grooming Services	3,824	16%	\$25,805	\$45,609	89%	Hairdressers, Hairstylists, and Cosmetologists; Skincare Specialists
Health and Medical Administrative Services	22,151	12%	\$48,169	\$84,795	55%	First-Line Supervisors of Office and Administrative Support Workers; Computer User Support Specialists
Teacher Education and Professional Development	16,993	9%	\$33,249	\$48,583	26%	Elementary School Teachers; Teaching Assistants
Design and Applied Arts	3,105	14%	\$36,672	\$69,837	30%	Graphic Designers; Photographers
Allied Health and Medical Assisting Services	9,993	20%	\$40,436	\$64,673	63%	Medical Assistants; Pharmacy Technicians

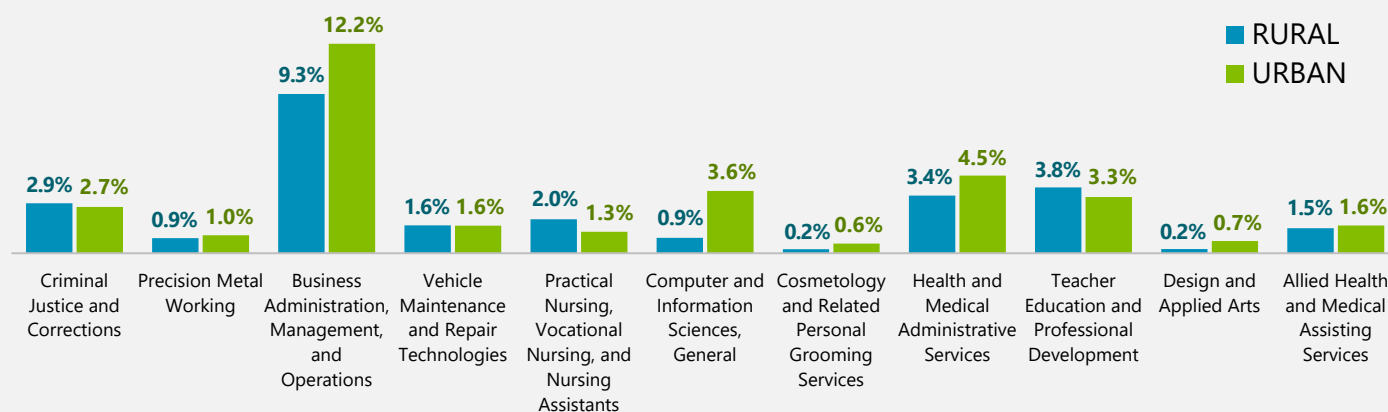
NOTES: Rows ordered by number of rural participants in our sample in the program area. Program areas identified by 4-digit Classification of Instructional Programs (CIP) code; three health-related program areas (within the 2-digit CIP code 51) ranked among the top 11 by 4-digit CIP code. Most labor market data from NC Commerce 2022-2032 occupational projections; share of workers nationally without a bachelor's degree from the U.S. Bureau of Labor Statistics.

ARE JOBS THAT USE SKILLS DEVELOPED BY CTE DUAL ENROLLMENT PATHWAYS MORE CONCENTRATED IN RURAL OR URBAN AREAS?

We calculated the portion of total employment in jobs related to each of the 11 most popular CTE program areas separately for rural and urban parts of North Carolina. Jobs that use skills developed by some CTE program areas make up a larger share of employment in rural parts of the state than in urban parts while the reverse is true for other program areas.

- **For which program areas are jobs more concentrated in rural parts of the state?** Jobs that use skills developed through the practical nursing and teacher education program areas make up a somewhat larger share of overall employment in rural parts of North Carolina than in urban parts of the state.
- **For which program areas are jobs more concentrated in urban parts of the state?** Jobs related to computer and information sciences; business administration, management, and operations; and health and medical administrative services are more prevalent in urban areas than rural ones. To use the skills they have learned, students in these program areas may be more likely to need to leave their rural communities or work as independent contractors. Cosmetology and design and applied arts jobs are also more concentrated in urban areas, but these fields are small, accounting for less than 1% of employment in both areas.
- **Jobs are distributed evenly for other program areas.** There is little difference between rural and urban parts of the state in the share of jobs related to criminal justice and corrections, precision metal working, vehicle maintenance, and allied health.

SHARE OF NORTH CAROLINA EMPLOYMENT IN JOBS RELATED TO PROGRAM AREA



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 (rural and town locales according to National Center for Education Statistics locale codes). We identified program areas 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. The analysis included nine cohorts of entering 11th graders from 2012 to 2020 and compared rates of participation by pathway to variation in availability of jobs connected to those pathways based on a CIP to Standard Occupational Classification (SOC) code crosswalk from the modernized version of The National Career Clusters® Framework. 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. Most labor market information presented here is from the NC Department of Commerce. We looked at employment estimates for [16 Prosperity Zone sub-regions](#). We identified rural sub-regions as those with more than half of their students enrolled at a rural or town school. The following six sub-regions are *not* considered rural: Asheville, Charlotte, Greensboro, Raleigh-Durham, Wilmington, and Winston-Salem. The remaining ten sub-regions we consider rural. The share of workers without a bachelor's degree is from U.S. Bureau of Labor Statistics analysis of 2021 and 2022 U.S. Census Bureau American Community Survey Public Use Microdata.

This is a publication of MDRC's National Rural Higher Education Research Center. The research reported here was conducted through a collaboration between MDRC, RAND, and the Early College Research Center at UNC Greensboro. The research was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305C240065 to MDRC. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education. To learn more about the study, please contact Mr. Brian Phillips, Policy Researcher at RAND, at Brian_Phillips@rand.org.