

Virginia Career and Technical Education: Agriculture, Food and Natural Resources

Virginia Department of Education, Office of Career, Technical, and Adult Education



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Virginia's 16 Career clusters and career assessments help students investigate careers and design their plan of study to advance their career goals. Within each career cluster, there are multiple career pathways that represent a common set of skills and knowledge, including academic, technical, and career readiness skills that lead to credentials necessary to pursue a full range of career opportunities from entry level to management, including technical and professional career specialties. CTE actively partners with business and industry to design and provide high quality, dynamic programs to meet current, emerging, and projected labor market needs. Relevant work-based learning opportunities and leadership development offered through career and technical student organizations are incorporated into the academic and career plan.

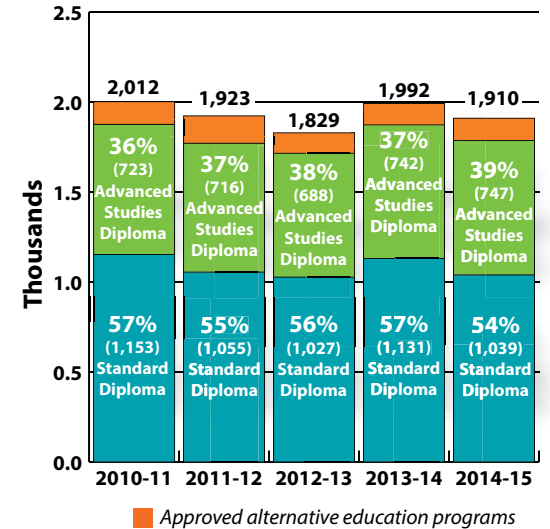
A CTE completer is a student who has met the requirements for a CTE concentration and all requirements for high school graduation, or an approved alternative education program. A concentration is a coherent sequence of state-approved courses. Students may take additional CTE courses that will enhance their career pathway goals. Completion of certain skill sets and coursework enables students to participate in Board-approved external examinations that test essential employability and technical skills. Students who earn these credentials are eligible to earn verified credit towards graduation requirements.

Beginning in 2013-2014, first time ninth grade students are required to earn a Board-approved career and technical education credential to graduate with a Standard Diploma.

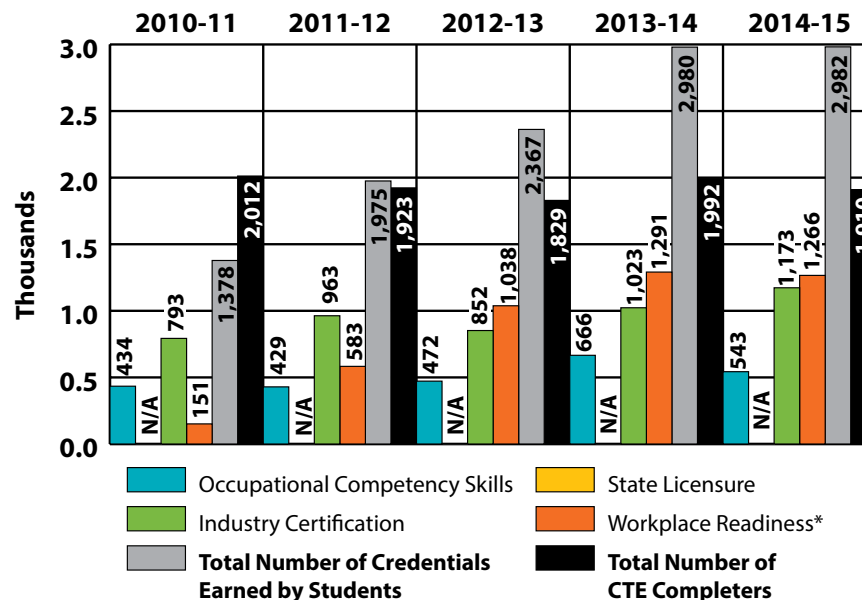
Types of credentials include:

- **Full Industry Certification** – from a recognized industry, trade, or professional association;
- **Pathway Industry Certification** – specific stackable credentials from a recognized industry that lead to a full industry certification;
- **Occupational Competency Skills Assessment** – a national standardized assessment of skills/knowledge in a specific career and/or technical area
- **State License** – required for entry into a specific occupation; and
- **Workplace Readiness Skills for the Commonwealth Certification** - for essential employability skills recognized by Virginia employers.

Completers Graduated with Standard and Advanced Studies Diplomas



Credentials Earned by CTE Students



NOTE: Completers may participate in one or more Board-approved credentialing test(s). Not all completers participate in the credentialing tests. There are age restrictions set by certain credentialing entities which would prohibit the student from testing until after high school. The cost of credentialing tests ranges from \$10 to \$300 per test.

*Prior to 2010-11, Workplace Readiness Skills assessments were included in the Industry Certification category.

Source: Virginia Department of Education

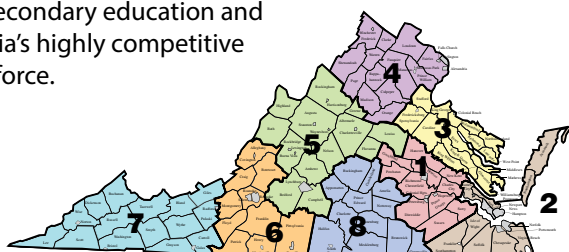
Virginia Career and Technical Education: Agriculture, Food and Natural Resources

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The **Agriculture, Food, and Natural Resources Career Cluster** prepares you for careers that involve the science and mechanics of improving the quality and safety of food, cultivating and preserving our natural resources and caring for livestock and other animals. Careers in conservation, including reducing the use of chemical fertilizers and pesticides, soil and water conservation, sustainable forestry and wildlife are some options in this diverse cluster. Additionally, you can learn about the business aspects involved in this broad field.

Virginia high school students learn the essential academic skills that are critical for all careers and the foundational skills needed for careers in Agriculture, Food, and Natural Resources. They begin to specialize in a field of interest as they complete a coherent sequence of courses within a pathway.

Secondary students who complete these rigorous and relevant pathway programs are ready for entry into postsecondary education and Virginia's highly competitive work force.



Selected Statewide Occupational Projections

Selected Occupation	2014 Median Wage ¹	2022 Projected Employment ²	Predominant Education Level ³
Landscaping and Groundskeeping Workers	\$24,010	36,600	High School
Farmworkers and Laborers, Crops	\$22,590	20,130	High School
Landscaping Supervisors	\$40,790	7,368	High School & Work experience
Veterinary Assistants	\$25,760	4,611	Some college/Associate Degree
Environmental Scientists and Specialists	\$74,230	3,899	Bachelor's or more
Farmworkers, Animals	\$25,800	3,662	High School
Water Treatment Plant Operators	\$39,040	3,615	High School & Training/certification
Veterinarians	\$91,980	3,254	Bachelor's or more
Environmental Engineers	\$98,620	2,926	Bachelor's or more
Veterinary Technologists and Technicians	\$36,420	2,230	Some college/Associate Degree
Farming, Fishing, and Forestry Supervisors	\$46,140	1,849	High School & Work experience
Biological Technicians	\$40,220	1,329	Bachelor's or more
Natural Sciences Managers	\$126,970	1,305	Bachelor's or more & Work experience
Environmental Science Technicians	\$44,050	807	Bachelor's or more & Training/certification
Geoscientists	\$91,220	616	Bachelor's or more
Environmental Engineering Technicians	\$43,020	537	Some college/Associate Degree
Conservation Scientists	\$59,100	491	Bachelor's or more
Forest and Conservation Technicians	\$36,370	379	Bachelor's or more
Agricultural and Food Science Technicians	\$35,270	226	Bachelor's or more
Soil and Plant Scientists	\$58,480	192	Bachelor's or more

¹ Wage data from the US Bureau of Labor Statistics Occupational Employment Statistics Program; ² Estimates from Virginia Labor Market Information. Occupational Projections (long-term) for Multiple Occupations in Virginia in 2012-2022. Retrieved via <https://data.virginialmi.com/>; ³ Predominant level of education and training information created by Trailblazers, based on US BLS occupational education and training data

Source: Virginia Employment Commission, Virginia Occupational Employment Projections 2013-2022

Agriculture, Food and Natural Resources 2014-2015 Enrollments**

Pathways	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8
Agribusiness Systems	2,102	803	1,222	6,064	4,553	4,562	4,715	2,164
Animal Systems	2,444	923	1,063	6,587	5,133	4,962	5,277	2,268
Environmental Service Systems	2,623	946	1,266	6,883	5,156	5,181	5,384	2,299
Food Products and Processing Systems	1,871	630	950	5,592	4,434	4,166	4,543	2,067
Natural Resources Systems	2,191	806	999	6,668	4,954	4,866	4,829	2,168
Plant Systems	2,648	869	1,242	6,590	5,164	5,103	5,298	2,289
Power, Structural, and Technical Systems	2,559	834	1,011	6,610	5,078	4,696	4,563	2,515

** NOTE: Duplicated Pathway student enrollments

Source: Virginia Department of Education