

# CTE: DEVELOPING THE AEROSPACE AND DEFENSE WORKFORCE

## Career and technical education (CTE) supports America's aerospace and defense needs by

preparing learners to enter this critical workforce, which employs more than **2.2 million**<sup>1</sup> people nationwide and supports commercial, military and national defense activities.

CTE programs in aerospace and defense develop students' technical, academic and employability skills through work-based and hands-on learning, ensuring that they are prepared to enter a **high-wage, in-demand** career in areas such as commercial aerospace, cyber systems and unmanned systems.

This infographic describes a small sample of the career opportunities available in the aerospace and defense workforce.

## COMMERCIAL AEROSPACE

- In 2022, the aerospace and defense workforce grew by over **100,000**<sup>2</sup> employees, the majority in the commercial aerospace sub-sector.
- Jobs for aerospace engineering technicians are growing **faster than average** and pay a median salary of more than **\$74,000**<sup>3</sup> annually, while aerospace engineers earn more than **\$126,000**.<sup>4</sup>
- Assemblers and fabricators working in aerospace manufacturing **earn more**<sup>5</sup> than their peers in most other manufacturing sub-sectors.
- Postsecondary certificates and degrees, industry certifications and apprenticeships can help people find **career success** in commercial aerospace.



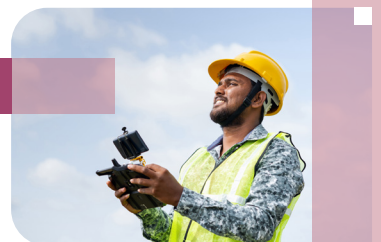
## CYBER SYSTEMS

- Jobs for information security analysts are projected to grow by **32%**<sup>6</sup> through 2032, much faster than the average growth for all occupations, and pay a median salary of more than **\$110,000** annually.
- There are **many opportunities** for IT professionals in cyber systems, including jobs for database administrators, network operations specialists and more.
- The job outlook in digital forensic analysis is strong, and these professionals can earn a salary of more than **\$98,000**<sup>7</sup> per year.
- Individuals can **launch careers** in cyber systems with industry certifications, postsecondary certificates and degrees, and apprenticeships.



## UNMANNED SYSTEMS

- The unmanned systems sub-sector is **booming**.
- Drone pilots make almost **\$60,000**<sup>8</sup> per year, while electrical engineers who develop unmanned systems technology earn a median salary of more than **\$100,000**.<sup>9</sup>
- **Unmanned systems professionals** work in agricultural monitoring, disaster management, aerial mapping, moviemaking, oil and gas exploration, and more.
- Credentials from industry and the Federal Aviation Administration (FAA), degrees and postsecondary certificates can support **entry into and success within** this sub-sector.





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# MORE JOBS IN AEROSPACE AND DEFENSE

In addition to the careers already profiled, CTE prepares youth and adults for these further occupations in aerospace and defense:

- **Network administrator**
- **Cyber defense incident responder**
- **Production technician**
- **Vulnerability assessment analyst**
- **Precision machinist**
- **Data scientist**
- **Defense contractor**
- **Cybersecurity engineer**
- **Database specialist**
- **Information system security officer**

The Da Vinci Academy of Aerospace Technology at Merritt Island High School in Florida is a four-year program open to students from across Brevard County. The academy offers five courses from the Project Lead the Way curriculum along with mentoring, job shadowing and opportunities to visit aerospace and engineering facilities such as NASA, Lockheed Martin and Northrop Grumman. The academy also fosters connections with regional postsecondary institutions like Embry-Riddle Aeronautical University.

# HOW CTE PREPARES THE AEROSPACE AND DEFENSE WORKFORCE

CTE programs of study and career pathways prepare secondary, postsecondary and adult learners for the aerospace and defense workforce in many ways:

- **Courses** in aerospace engineering, network administration, mechatronics, cybersecurity and more spanning secondary and postsecondary education.
- Opportunities to earn **postsecondary certificates and degrees** in aerospace technology, unmanned systems, cybersecurity, aerospace manufacturing, information systems technology and more.
- Opportunities to earn **industry credentials** from the FAA as well as CompTIA, the National Center for Autonomous Technology, SAE International, SpaceTEC® and the Unmanned Safety Institute, among others.
- **Work-based learning** experiences like job shadowing, internships and apprenticeships.
- Competitive events, service learning and leadership development through **career and technical student organizations** such as SkillsUSA and the Technology Student Association.
- **Activities** that build technical, academic and employability skills such as teamwork, communication and problem solving.

## Learn More

This Sector Sheet highlights just a few occupations within the aerospace and defense workforce. To learn more, please visit the U.S. Department of Labor at [www.CareerOneStop.org/ExploreCareers](http://www.CareerOneStop.org/ExploreCareers) and [MyNextMove.org](http://MyNextMove.org).

## Citations

<sup>1</sup>Aerospace Industries Association (2023, September). *AIA releases 2023 facts & figures data highlighting A&D industry's return to pre-pandemic levels*. Retrieved from <https://www.aia-aerospace.org/news/aia-releases-2023-facts-figures-data-highlighting-ad-industrys-return-to-pre-pandemic-levels/>

<sup>2</sup>Ibid.

<sup>3</sup>U.S. Bureau of Labor Statistics. (2023, September). *Occupational outlook handbook: Aerospace engineering and operations technologists and technicians*. Retrieved from <https://www.bls.gov/ooh/architecture-and-engineering/aerospace-engineering-and-operations-technicians.htm>

<sup>4</sup>U.S. Bureau of Labor Statistics. (2023, September). *Occupational outlook handbook: Aerospace engineers*. Retrieved from <https://www.bls.gov/ooh/architecture-and-engineering/aerospace-engineers.htm>

<sup>5</sup>U.S. Bureau of Labor Statistics. (2023, November). *Occupational outlook handbook: Assemblers and fabricators*. Retrieved from <https://www.bls.gov/ooh/production/assemblers-and-fabricators.htm#tab-5>

<sup>6</sup>U.S. Bureau of Labor Statistics. (2023, September). *Occupational outlook handbook: Information security analysts*. Retrieved from <https://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm>

<sup>7</sup>My Next Move. (2023, November). *Digital forensics analysts*. Retrieved from <https://www.mynextmove.org/profile/summary/15-1299.06>

<sup>8</sup>American Society of Civil Engineers and Discovery Education. (2022). *STEM Careers Coalition: Drone pilot*. Retrieved from <https://www.asce.org/-/media/asce-images-and-files/career-and-growth/pre-college-outreach/documents/scc-asce-career-profile-drone-pilot.pdf>

<sup>9</sup>U.S. Bureau of Labor Statistics. (2023, September). *Occupational outlook handbook: Electrical and electronics engineers*. Retrieved from <https://www.bls.gov/ooh/architecture-and-engineering/electrical-and-electronics-engineers.htm>