



**ECONOMIC
DEVELOPMENT
COMMISSION**
FLORIDA'S SPACE COAST

SPACE COAST WORKFORCE INTELLIGENCE REPORT

**A Blueprint for Certifications in
Aerospace, Space, Aviation and Defense**

Foreword

By Lynda Weatherman, President & CEO

Economic Development Commission of Florida's Space Coast (EDC)

On Florida's Space Coast, where aerospace, aviation, advanced manufacturing, and high-tech innovation drives our economy, ensuring a pipeline of qualified talent is not just an ambition, it is a necessity. As we continue to drive economic growth and attract world-class companies to our region, our workforce remains a competitive advantage.

This *Workforce Intelligence Report: A Blueprint for Certifications in Aerospace, Space, Aviation, and Defense* was completed to identify a clear, employer-driven blueprint of the demand for top credentials, qualifications, and training programs needed to align with real-world industry demands.

The EDC selected Coyne Workforce Solutions (CWS) as its consulting partner. Led by Dr. Mildred Coyne, CWS brings deep expertise in workforce strategy, workforce education program design, and credential alignment to guide this study. CWS ensures employer feedback is translated into actionable recommendations that will expand our talent pipelines, build apprenticeship capacity, and strengthen coordination among local and regional education and industry partners.

The Workforce Intelligence Report is an action-oriented strategy designed to equip education and training providers with the data needed to develop industry-aligned programs. By transforming employer insights into clear training priorities, we ensure institutions can effectively prepare job seekers for the high-quality careers that define the Space Coast's economy.

As we continue to position our region as a premier destination for high-tech industries, we extend our sincere gratitude to the industry leaders, employers, and workforce development partners who contributed their time and insights to this study.

As we build our economy, this report will be utilized to foster additional partnerships focused on connecting talent with opportunity, ensuring local businesses thrive, and preserving Florida's Space Coast as a leader in innovation.

Lynda Weatherman

President & CEO

Economic Development Commission of Florida's Space Coast



Researcher's Acknowledgement

Coyne Workforce Solutions, (CWS) served as the lead research and strategy partner for the *Space Coast Workforce Intelligence Report*, under the leadership of Dr. Mildred G. Coyne. Dr. Coyne directed the Industry Needs Assessment, interviewing 18 aerospace, aviation, space, and defense employers to capture real-time workforce demand and hiring requirements.

A key contribution of this work is the translation of employer-identified skills into nationally recognized industry certifications, forming the foundation of the report's training and certification blueprint. This blueprint provides colleges with actionable strategies to align programs, expand credential pathways, and produce job-ready talent at scale, positioning the Space Coast as a model for workforce innovation and economic growth.

Table of Contents

<i>Introduction.....</i>	<i>1</i>
Executive Summary.....	1
Findings Overview.....	2
The Current Landscape: Industry Growth Increases Demand for Skilled Workers.....	3
<i>Part 1 Industry Needs Assessment.....</i>	<i>5</i>
Industry Input is Essential to Workforce Alignment.....	5
Voices of Industry: Direct Hiring Needs from the Front Lines	5
What We Heard: Employer Insights.....	6
Objectives of the EDC Industry Needs Assessment.....	6
Project Timeline.....	7
<i>Part 2: The Findings.....</i>	<i>8</i>
Finding 1. Workforce Challenges Reported by Interviewed Employers.....	8
Finding 2. Highest Demand Basic and Priority Technical Skills	8
Finding 3: Projected New and Future Job Demand.....	10
Finding 4. Translating Employer Demand into Education and Training Outcomes.....	11
<i>Part 3: Space Coast Industry Certification Blueprint.....</i>	<i>12</i>
Immediate Workforce Needs and Training Solutions	12
Space Coast Training Roadmaps	16
<i>Part 4: Tactics and Measures</i>	<i>19</i>
Workforce Intelligence Report Implementation.....	19
Tactic 1: <i>Boost</i> Enrollment in Existing Certification Programs.....	19
Tactic 2: <i>Integrate</i> Industry Certifications into Existing Programs	19
Tactic 3: <i>Create</i> New Certification Programs to Meet Employer Demand	19
Workforce Intelligence Report Implementation Goals.....	20
<i>Part 5: Next Steps and Conclusion.....</i>	<i>21</i>
Next Steps	21
Conclusion	23
<i>Appendix A.....</i>	<i>24</i>
Project Timeline.....	24
<i>Appendix B.....</i>	<i>25</i>

Workplace Essential Competencies and Foundational Skills	25
<i>Appendix C</i>	28
Best Practices in Action	28
Employer Led Strategy to Address Workforce Shortage	29
Community Collective for Workforce Development	30
<i>Appendix D</i>	31
Detailed Information about Certifications in Table 4	31
Detailed Information about High-Demand Skills in Table 4	35

Introduction

Executive Summary

Florida's Space Coast is experiencing unprecedented growth in aerospace, defense, and advanced manufacturing industries. Legacy companies like Boeing, Lockheed Martin, Collins Aerospace, Leonardo DRS, Northrop Grumman, and Embraer have established major operations, while new space entrants such as Blue Origin, SpaceX, and Amazon's Project Kuiper are expanding the region's footprint. This growth has amplified demand for skilled talent, from composites fabricators and machinists to electronics technicians and aircraft mechanics.

The Economic Development Commission (EDC) of Florida's Space Coast recognizes the urgent challenges associated with workforce shortages and the critical need for aligning educational resources with evolving industry demand. In close collaboration with industry leaders across aerospace, space, aviation, and defense, the EDC has developed this Workforce Intelligence Report as a strategic tool for education partners. This report provides a comprehensive and functional blueprint to align targeted, high-impact training programs and certifications with employer needs ensuring the local workforce is appropriately prepared to meet the region's current and future needs.

Built on extensive interviews with industry leaders responsible for hiring and operations, the Space Coast Workforce Intelligence Report identifies the most critical skills, certifications, qualifications, and training pathways needed to build and sustain a workforce capable of meeting industry demands and the region's economic growth. Key findings include:

- **Expanded Workforce Education:** Leveraging and expanding workforce education throughout the region is needed to fast-track talent development to address the skills gap.
- **Industry Recognized Certifications:** Promote and embed industry-recognized certifications into local training curricula to validate skills that Space Coast employers demand.
- **Employer-Education Alignment:** Strengthen partnerships between employers and education providers, including Eastern Florida State College, to co-develop programs around specific competencies.
- **Roadmap to 2026:** An implementation plan including tactics and action to meet projected workforce demand through sustained industry collaboration, talent development, and a steady pipeline of qualified workers.

These findings form the foundation of an actionable training and certification blueprint designed to close skills gaps, expand credentialing opportunities, and create a pipeline of job-ready talent across high-demand sectors.

Findings Overview

Based on in-depth interviews with 18 manufacturing, defense, aerospace, and aviation industries in Brevard County, all employers identified the need to improve basic technical skills - skills that transcend each of these industries individually, covering topics such as mechanical aptitude, blueprint reading and interpretation, measurement and precision tools, workplace safety, lean manufacturing principles, hand and power tools operation, clean room operations, materials and processes, electronic and avionics components, and machine maintenance.

Beyond the foundational skills identified above, employers shared priority technical skills needed. These include quality, troubleshooting, CNC programming, composite materials fabrication and repair, non-destructive testing, soldering and wire harness assembly, robotics and automation, electronics, and avionics. The priority technical skills align to the critical job demands employers emphasize are needed to support the growth and innovation across these industries. Employers emphasize that proficiency in these skills is not just beneficial but essential for maintaining competitiveness and operational excellence. To address these concerns, this blueprint has detailed recommendations for industry certifications in each of these areas. Eastern Florida State College and other area college partners will need to be leveraged to add these industry certifications and increase graduate output of existing certifications.

There were also several operational problems that rise above any individual company and affect the Space Coast workforce as a whole - these include the talent supply for 2nd and 3rd shift, talent retention, and limited security clearance availability. Once a pipeline is established of trained workers, these issues will also be lessened.

To increase the output of workers, the blueprint details three tactics for Eastern Florida State College and other area college partners. First is to boost enrollment in existing certification programs. The second is to integrate industry certifications into existing programs. The third is to create new certificate programs based on the employer demand as found through the interview process. These steps are designed to meet the needs of local employers for many years into the future. This blueprint details the findings and recommendations for a bright manufacturing future for the Space Coast of Florida.

The Current Landscape: Industry Growth Increases Demand for Skilled Workers.

Florida’s Space Coast is undergoing an unprecedented surge in aviation, aerospace, defense, and advanced manufacturing with over 500 companies in these industries. The industry’s growth trajectory is driven by commercial space launch activities, military contracts, and the expansion of aircraft manufacturing/maintenance. This explosive expansion represents a transformative opportunity, akin to a tsunami of innovation and economic activity, that will reshape the region’s workforce and infrastructure.

Morgan Stanley’s space team estimates that roughly \$630 billion global space industry could surge to over \$1.8 trillion by 2035.

It is imperative that the Brevard community responds with a coordinated, strategic plan to harness this momentum, ensure wide-ranging growth, and position itself as a national leader in the space and advanced technology economy.

By 2031, market growth, fueled by automation, advanced production needs, rapid technological advancements, and geopolitical shifts—is projected to accelerate across key sectors.

				
110% increase in space launch services from 2023 to 2032	10X increase in satellite launch and deployment from 2023 to 2032	60% surge in defense electronics & missile systems, reaching \$738 billion by 2028	2X growth in the advanced materials & composites market by 2031	115% increase in precision manufacturing & CNC machining by 2031

According to the US Bureau of Economic Analysis (2025), in private industry, the space economy supported 373,000 full-and part-time jobs in 2023. The Space Coast’s economic expansion in aerospace and advanced manufacturing has created an urgent need for highly skilled, entry-level workforce. Brevard County’s manufacturing employment has

defied national trends – growing 19% since 2001 even as U.S. manufacturing jobs fell by 28%. Likewise, the resurgence of space launch activity and defense contracts has transformed the region into a “mecca” of aerospace innovation. Employers from global primes to specialized suppliers are competing for local talent. In examining the national workforce outlook, there is significant interest in these industries reshaping the global economy and fueling demand for high-wage, highly skilled technical talent. From missile production to commercial satellite launches, the industries anchoring the Space Coast now require a skilled, credentialed workforce that will meet highly technical and rapidly evolving demands.

“The pace of innovation in aerospace and advanced manufacturing on the Space Coast is outpacing the pipeline of skilled workers. We need more training programs that are aligned with real-time industry standards, especially in avionics, composites, and welding, to stay competitive and continue growing.”

— Director of Manufacturing Operations, Global Aerospace and Defense Company, Brevard County, Florida

The employers interviewed in this study consistently cited the lack of qualified candidates, competition with other employers for top talent and rising salary expectations as their most pressing workforce challenges. These concerns are particularly acute in high-skill, high-demand occupations where technical proficiency and industry-recognized certifications are essential. Additionally, manufacturing industry experts report that 80% of employers face a significant shortage of skilled applicants, a trend echoed through the Space Coast during the 2025 Industry Needs Assessment interviews.

Florida’s Space Coast has a unique opportunity to address these challenges and lead this workforce transformation provided the region develops a robust talent pipeline aligned with employer needs across sectors to address market growth. By aligning educational programs with employer needs and accelerating access to high-quality training and certifications, the Space Coast can position itself to address local market demand but also as a national model for workforce innovation and economic resilience.

Part 1 Industry Needs Assessment

Industry Input is Essential to Workforce Alignment

This Space Coast Workforce Intelligence Report captures **direct input from industry leaders** gathered through in-depth interviews with company representatives that have direct hiring and operations responsibilities. The interviews sought to identify the most critical certifications, qualifications, and training pathways needed to build and sustain a workforce capable of meeting industry demands. These interviews provided firsthand insights into the real-world demands of employers across aerospace, aviation, defense, and advanced manufacturing sectors, highlighting both immediate needs and long-term workforce challenges. Employers detailed the most essential certifications, qualifications, and training pathways to sustain a talent pipeline that meets their evolving needs.

This report translates employer feedback and industry needs assessment into an actionable training and certification blueprint that outlines training strategies, industry-recognized certifications, and scalable solutions to address talent shortages. By mapping these findings to concrete training initiatives, the blueprint serves as a vital guide for education and workforce partners seeking to align programs with evolving industry expectations.

Most importantly, this study was conducted to directly inform the development of new training programs and adjust existing curricula at Eastern Florida State College (EFSC), ensuring that the region's workforce remains competitive and aligned with industry requirements. The goal is to ensure that the Space Coast's talent pipeline remains agile, credentialed, and fully equipped to meet the demands of a rapidly advancing economy—positioning the region as a national leader in workforce readiness and innovation.

Voices of Industry: Direct Hiring Needs from the Front Lines

Through in-depth, one-on-one interviews by a workforce development expert, representatives from Space Coast companies provided valuable insights into both current and future workforce needs. Collectively, these employers represent over 30,000 job openings across aerospace, space, aviation, and defense sectors. Interviews were conducted with leaders at various levels holding key roles in talent strategy and operations, including titles such as Director of Manufacturing Operations, Workforce Development Manager, Human Resources Business Partner, Talent Acquisition Lead, and Technical Training Manager. In the structured interviews, employers discussed critical hiring challenges, training requirements, and the specific credentialing standards necessary for job readiness. Their feedback highlights a significant skills gap in key positions, underscoring the urgency for targeted workforce development efforts.

The participating companies included renowned and influential organizations in aerospace, space, aviation, and defense on Florida's Space Coast including:

Airbus U.S. Space & Defense	Dassault Falcon Jet	Northrop Grumman
Amazon Project Kuiper	Embraer	Sidus Space
Amentum (formerly Jacobs)	Knight Armament	Space Delta XII US Space Force
Ares Corporation	Leonardo DRS	SpaceX
Boeing Company	Lockheed Martin	Structural Composites
Collins Aerospace	L3Harris	United Launch Alliance

These companies represent the backbone of the region’s space and defense industries, playing a pivotal role in shaping the future of aerospace, space, aviation, and defense on the Space Coast. Their input not only informed this Workforce Intelligence Blueprint but also affirmed the region’s strategic importance in maintaining national competitiveness and technical leadership.

What We Heard: Employer Insights

Employer interview responses were analyzed and synthesized into key themes that reflect the core workforce needs across these key industries. Findings include:

- A strong demand for technical certifications aligned with industry standards
- Limited availability of specialized training in key areas such as composites, non-destructive testing, and aviation maintenance.
- Need for greater alignment between training currently offered and the actual skills and credentials required by employers
- Urgent call for short, stackable, and flexible training models that respond quickly to industry needs

Objectives of the EDC Industry Needs Assessment

The Workforce Intelligence Report provides education and training partners with critical data insights. It outlines strategies to align talent development with the Space Coast's aerospace, space, aviation, and defense industries. The report aims to bridge the gap between employers and educators by translating industry input into targeted training solutions such as credentialing pathways with scalable workforce strategies.

By identifying the most critical certifications, skills, and programmatic needs, this blueprint supports the creation of a responsive and resilient talent pipeline that fuels long-term economic growth and regional competitiveness. The table below outlines the key objectives that guided the EDC’s Industry Needs Assessment, along with brief descriptions for each. These objectives framed the structure of employer interviews and served as the foundation for developing a responsive, data-informed, functional blueprint to reinforce current talent supply and develop new skills needed by industry.

Table 1

EDC Industry Needs Assessment Project Objectives

Project Objective	Description
Identify Current and Near-Term Employer Workforce Needs	Identify new and emerging workforce demand across Space Coast industries
Define Skills and Qualifications	Understand the specific certifications, credentials, and competencies required for high-demand roles
Measure Workforce Capacity	Estimate the number of workers required to meet projected hiring needs
Align Curriculum Capacity	Assess how well current training programs match with real-time employer's expectations
Develop Blueprint to Meet Demand	Create the actionable training certification blueprint to guide workforce development efforts in the Space Coast

Project Timeline

The development of the Space Coast Workforce Intelligence Report followed a strategic, multi-phase process designed to translate employer insights into actionable solutions. The timeline below outlines key stages for the project – from initial planning and stakeholder engagement to data collection, analysis, and the development of this blueprint. Table 2 below summarizes major milestones and activities. Appendix A includes a complete, detailed timeline and implementation steps for the project.

Table 2

Key Project Stages and Timeline

Stage	Description	Start Date	End Date
Employer Discovery	Identified 18 employers and confirmed the most knowledgeable company representative for interviews	August 2024	September 2024
Employer Interviews	Conducted structured interviews focused on skills, credentials, hiring needs, and workforce qualifications, followed by a post-interview survey on workforce size and pain points	October 2024	April 2025
Credential Discovery	Analyzed skill needs from interviews, aligned them with Florida's Master Credentials List, and benchmarked national best practices in employer-led training	January 2025	April 2025

Part 2: The Findings

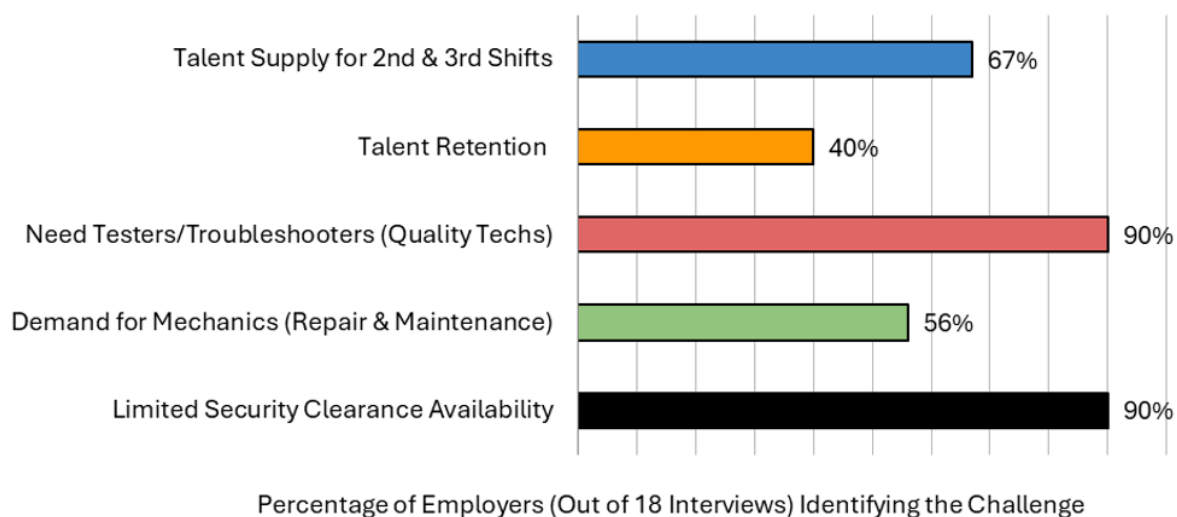
Finding 1. Workforce Challenges Reported by Interviewed Employers

Common workforce supply challenges reported by employers include the overall need for skilled mechanics and challenges of smaller companies to retain workers, often losing them to larger companies. As many as 16 of the 18 companies expressed the need for testers/troubleshooters (Quality Technicians). These roles require a specific problem-solving and critical thinking skillset, yet employers find that qualified employees often prefer to perform the work rather than inspect it. Compounding the challenges, at least 12 companies are already seeking to add second or third shifts amid the current hiring challenges, intensifying the need for rapid workforce expansion.

These employer-reported challenges are reflected in Figure 1, which highlights the most commonly reported workforce challenges across Space Coast employers.

Figure 1

Employer-Reported Workforce Challenges



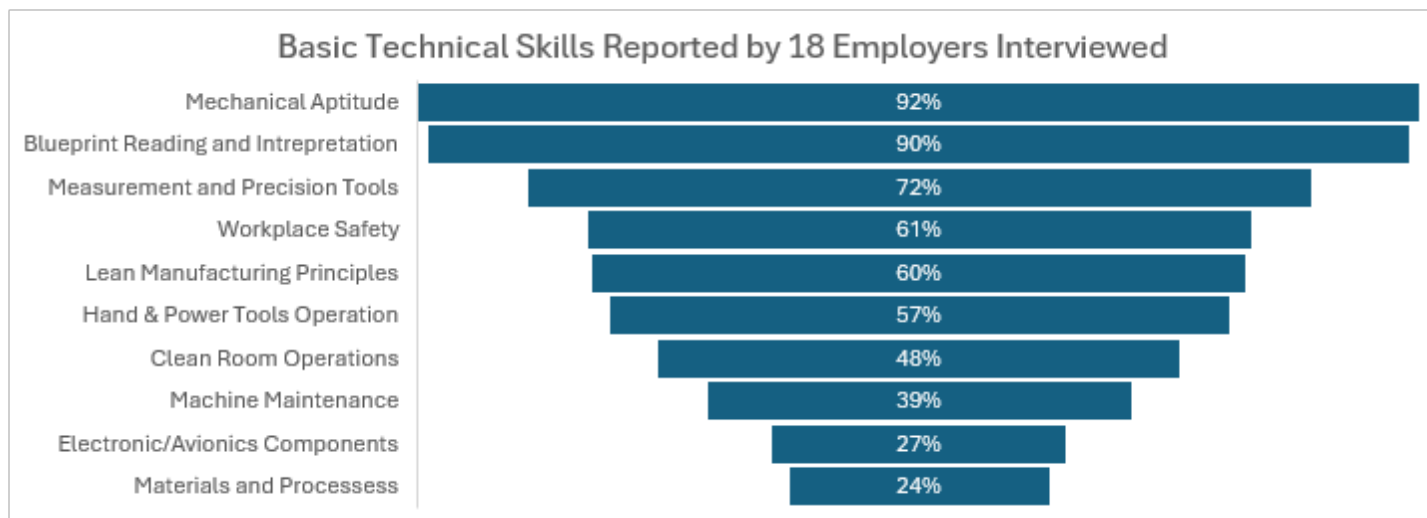
Finding 2. Highest Demand Basic and Priority Technical Skills

All the employers interviewed identified the need to improve the foundation of basic technical skills necessary for employees across all industries in the study group. These skills are universal across all the industry sectors and occupations within the industries. Technical skills are essential for a wide array of entry- and mid-level positions. Education and training entities should be diligent to ensure these skills are integrated into foundational training to ensure the development of critical skills across various sectors.

Definitions and detail for each skill are provided in Appendix B to guide curriculum alignment and training development.

Figure 2

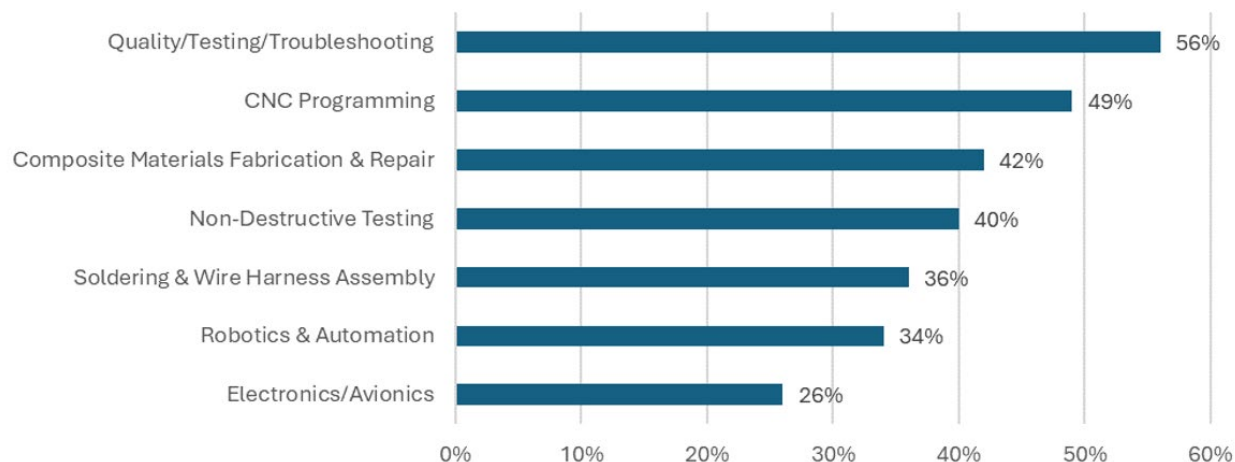
Basic Technical Skills



Beyond the foundational skills identified, employers shared priority technical skills needed. Figure 3 shows the priority technical skill and the frequency of employer responses, highlighting the most in-demand technical capabilities across aerospace, space, aviation, and defense.

Figure 3

Priority Technical Skills



Brief descriptions of the priority technical skills that were most frequently identified by employers as essential for workforce readiness in aerospace, space, aviation, and defense industries.

1. **Quality/Testing/Troubleshooting:** Employers place high importance on the ability to perform quality testing and troubleshooting, which is essential for ensuring product standards and operational efficiency.
2. **CNC Programming:** A strong demand exists for workers skilled in CNC programming, reflecting the importance of precision and automation in manufacturing processes.
3. **Composite Materials Fabrication and Repair:** The ability to fabricate and repair composite materials is crucial, especially in industries like aerospace where lightweight, durable materials are key.
4. **Non-Destructive Testing:** Non-destructive testing skills are necessary for ensuring safety and quality in materials and components without damaging them.
5. **Soldering and Wire Harness Assembly:** This skill is required for assembling and maintaining electrical systems, which are critical in many manufacturing environments.
6. **Robotics and Automation:** Robotics and automation skills are essential for operating, programming, and maintaining automated systems that improve efficiency and precision in manufacturing processes.
7. **Avionics/Electronics:** Knowledge of avionics and electronics remains essential, particularly in the aerospace and defense industries where electrical systems are integral to operations.

Understanding these technical skills needs in relation to job demand is crucial for developing training programs that effectively prepare the workforce for the evolving requirements of the aerospace, space, aviation, and defense industries.

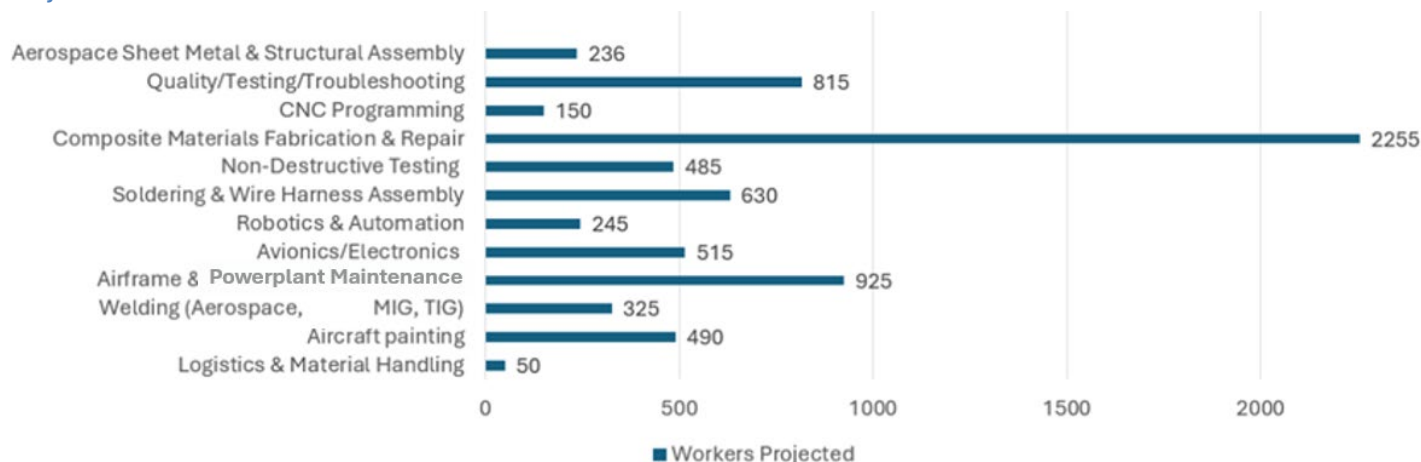
Finding 3: Projected New and Future Job Demand

The priority technical skills aligned to the critical job demands employers emphasize are needed to support the growth and innovation across these industries. Employers emphasize that proficiency in these skills is not just beneficial but essential for maintaining competitiveness and operational excellence.

The next figure represents the projected job demand in the next 18-24 months, identified by employers. In some instances, the job demand extends beyond 2 years due to long-term defense contracts.

Figure 4

Projected New and Future Job Demand Next 18–24+ Months



Finding 4. Translating Employer Demand into Education and Training Outcomes

To help education and training providers respond effectively, the projections in Figure 4 have been used to develop annual training metrics – offering a clear view of the talent pipeline needed to meet employer expectations. This forward-looking data equips education institutions with actionable insights to scale programs, align credentialing pathways, and close training gaps in high-priority occupations.

Table 3 below outlines the forecast of skilled workers needed by occupation over the next three years, based on input from the Space Coast employer interviews. The projection model assumes a phased hiring approach – 25% of workforce demand occurring in Year 1 (initial ramp-up), 50% in Year 2 (peak demand), and the remaining 25% in Year 3 (sustained need). These projections provide a planning framework for education and workforce partners to align enrollment targets, program capacity, and credentialing strategies with expressed worker demand.

Table 3

Workforce Demand Over Three Years Based on Employer Projections

Occupation/ Skill Area	Year 1: Initial Ramp-Up (25%)	Year 2: Peak Demand (50%)	Year 3: Sustained Need (25%)	Total Workers Projected
Composite Materials Fabrication and Repair	564	1127	564	2255

Airframe and Powerplant Maintenance Mechanic	232	462	232	925
Quality/Testing/Troubleshooting	204	407	204	815
Soldering and Wire Harness Assembly	158	314	158	630
Avionics/ Electronics	129	257	129	515
Aircraft Painting	123	244	123	490
Non-Destructive Testing	122	241	122	485
Welding (Aerospace, Orbital, Laser, MIG, TIG)	81	163	81	325
Robotics and Automation	61	123	61	245
Aerospace Sheet Metal and Structural Assembly	59	118	59	236
CNC Programming	37	76	37	150
Logistics and Material Handling	12	26	12	50

Part 3: Space Coast Industry Certification Blueprint

With billions of dollars in new defense and commercial space contracts fueling economic growth, Florida's Space Coast employers urgently need talent that can be trained and deployed within months, not years. Traditional degree pathways alone are not sufficient to meet this urgency. Instead, short-term credentials and certifications have emerged as essential tools for rapidly preparing both new entrants and incumbent workers with the skills needed to meet the region's growing workforce demands.

The following strategic action plan is designed in response to the employer feedback and labor market analysis captured in the industry interviews. It is developed to address urgent and long-term workforce needs across aerospace, aviation, defense, and advanced manufacturing sectors. This blueprint outlines critical skills gaps, aligns training capacity with market demand, and provides scalable solutions to expand credentialing pipelines across the region. Serving as a roadmap, it provides a framework to expand access to industry-recognized certifications, accelerate training pipelines, and ensure the availability of a highly skilled, job-ready workforce to meet employer demand today and into the future.

Immediate Workforce Needs and Training Solutions

Employers listed the top job skills, and the required number of workers needed now and in the coming years for current and future projects. This workforce intelligence was utilized to

align skills with competencies in valuable industry certifications. **The process of translating skills into certifications is critical for establishing a stable and prepared workforce to satisfy employer needs.** The succeeding three tables illustrate how skills are converted into industry certifications, the current training available for the certifications, and the output from those programs over the past five years.

Table 4 details the correlation between high-demand skills and the relevant industry certifications along with the certifying organizations. Then Table 5 shows the projected demand based on industry interviews, detailing the most urgent talent needs, the current certification availability and the number of candidates produced by the public state college. The last table in this section, Table 6, represents the industry certifications that have only partial or no training available.

Table 4

High-Demand Skill Translation to Industry Certifications

Top employer-identified skills, aligned certifications, and related certifying body for Aerospace, Space, Aviation, and Defense. Detailed descriptions of the certifications are in Appendix D.

Certification	Certifying Body	High-Demand Skill
Certified Composites Technician	CCT – ACMA	Composite Materials Fabrication and Repair
Basic Composites Certification	SpaceTEC	
Airframe & Powerplant (A&P)	Federal Aviation Administration (FAA)	Aircraft Maintenance & Powerplant Systems (A&P)
Certified Quality Inspector (CQI)	American Society for Quality (ASQ)	Quality, Testing and Troubleshooting
IPC-A-610: Acceptability of Electronic Assemblies	IPC (Association Connecting Electronics Industries)	
Certified Calibration Technician (CCT)	American Society for Quality (ASQ)	
IPC J-STD-001 (Soldering)	Institute of Printed Circuits (IPC)	Soldering and Wire Harness Assembly
IPC/WHMA-A-620 (Cable and Wire Harness)		
NASA-STD-8739.4 (High-Reliability Aerospace Soldering)		
Certified Electronics Technician (CET)	National Center for Aerospace and Transportation Technologies (NCATT)	Avionics/ Electronics

Aircraft Electronics Technician (AET) Entry-Advanced Electronics Certification General Radiotelephone Operator License (GROL)	ETA International CertTec- ASTM International Federal Communication Commission (FCC)	
Aerospace Coatings Application Specialist (ACAS) Certification:	SpaceTEC	Aircraft Painting
American Society Non-destructive Testing Level I, II or III	American Society Non-destructive (ASNDT)	Non-Destructive Testing (NDT)
AWS D17.1 Aerospace Welding	American Welder Society (AWS)	Industrial, Orbital/Aerospace Welding (TIG/MIG)
C-101 Certified Industry 4.0 Associate	Smart Automation Certification Alliance (SACA)	Robotics and Automation Support. Blueprint and Schematics Reading
Aviation Structures	CertTEC ASTM International's National Center for Aerospace and Transportation Technologies (NCATT)	Aerospace Sheet Metal and Structural Assembly
CNC Machining Level 1 Certified SOLIDWORKS Associate (CSWA) Geometric Dimensioning and Tolerancing Professional Certification - Technician Level	National Institute for Metalworking Skills (NIMS) SOLIDWORKS American Society of Mechanical Engineers (ASME)	CNC Machining and Precision Manufacturing Blueprint Reading and Geometric Dimensioning and Tolerance
Certified Logistics Associate (CLA) and Certified Logistics Technician (CLT) Certified Forklift Technician OSHA 10/30 – General Industry	Manufacturing Skills Standards Council (MSSC) Occupational Safety and Health Administration (OSHA)	Logistics and Material Handling

The following table summarizes key industry certifications, the projected workforce demand, and the number of graduates from Eastern Florida State College (EFSC) in each certification area during the past five years. This highlights opportunities to expand or initiate targeted training programs to bridge existing workforce gaps.

Table 5

Certification Demand vs. EFSC Graduate Output (5-Year Comparison)

This list features **certifications offered at EFSC**, ranked by employer demand.

Certification	3-year Projected Workers Needed	Graduates from EFSC Last 5 Yrs
Airframe & Powerplant (A&P)	925	176
IPC J-STD-001 (Soldering)	630	147
IPC/WHMA-A-620 (Cable and Wire Harness)		
NASA-STD-8739.4 (High-Reliability Aerospace Soldering)		
AWS D17.1 Aerospace Welding	325	98 Welding Certificate
CNC Machining Level 1	150	36 CNC Certificate
CAD/CAM and SOLIDWORKS		86 AutoCAD Foundations
Blueprint Reading and GD&T		

** indicates graduation data does not specify certification attainment or data is not available

Table 6

High-Demand Certifications Not Currently Offered at EFSC

Includes gaps where existing programs lack full alignment with certification competencies.

This table features certifications needed by employers **but not available at EFSC**. Some of the skills are included in certificates or degrees but do not fully cover the competencies required for the certification.

Certification	Projected Workers Needed	Graduates from EFSC Last 5 Yrs
Certified Composites Technician	2255	174
Basic Composites Certification		Engineering Technology AS Degree**
Certified Quality Inspector (CQI)	815	
IPC-A-610: Acceptability of Electronic Assemblies		
Certified Calibration Technician (CCT)		

Avionics Technician Certification (ATC)	515	0
Certified Electronics Technician (CET)		
Aircraft Electronics Technician (AET) Entry-Advanced Electronics Certification		
General Radiotelephone Operator License (GROL)		
Aerospace Coatings Application Specialist (ACAS) Certification:	490	---
American Society Non-destructive Testing Level I and II	485	**
FAA-approved NDT Training		
Smart Automation Certification Alliance (SACA)	245	**
Intro to PLCs and Mechatronics		
Aerospace Sheet Metal Technician	236	164
Aircraft Structures Training		
Certified Logistics Technician (CLT)	62	0
Forklift Operator		
OSHA 10/30 – General Industry		

* Indicates graduation data does not specify certification attainment or data is not available

Space Coast Training Roadmaps

A single certification may open the door to a job, but it's rarely enough to sustain a long-term career in today's fast-evolving industries. To ensure career longevity, adaptability, and upward mobility, workers need a clear, structured pathway for continuous skill development. Customized training roadmaps for careers in aviation, aerospace, space, and defense on Florida's Space Coast provide this structure. These roadmaps outline entry, mid, and advanced career pathways with training timelines and certifications at each stage. Each sample roadmap begins with foundational courses and short-term certifications to earn industry-recognized credentials. It then details the education required for specialized certifications aligned with employer needs, followed by advanced training to pursue long-term certifications for leadership and high-paying roles in aerospace, space, aviation and defense.

Figure 5 and 6

Figure 5

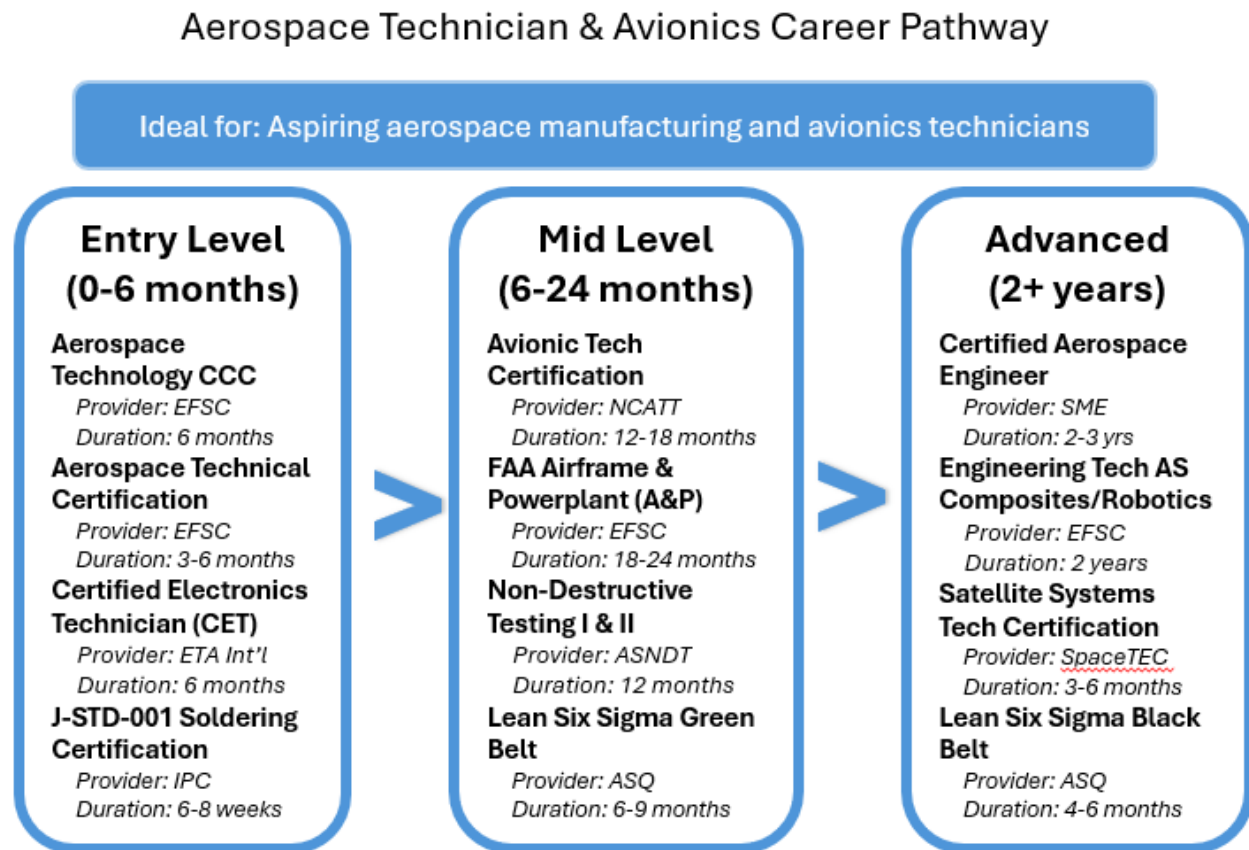
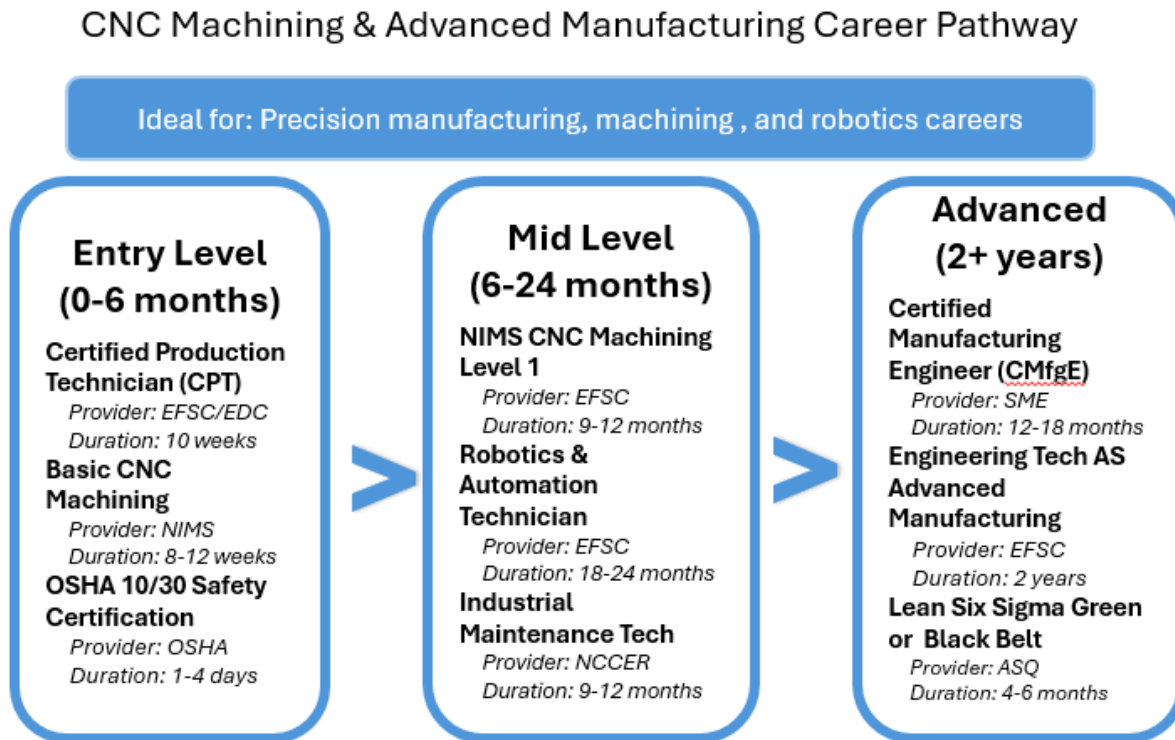


Figure 6



While customized training roadmaps provide a clear framework for career progression, their success relies heavily on strong partnerships between education providers and industry. To better understand how such collaboration can drive workforce outcomes, several national models were examined.

Notably, three workforce development best practices were studied as exemplary strategies for engaging employers and educators to improve the workforce supply in related sectors, including - AlabamaWorks, a statewide initiative built around regional employer-led councils; Lake Washington Institute of Technology + Amazon Kuiper, an industry co-designed short-term training model; and Community College Wichita's Talent Ecosystem for Aerospace and Advanced Manufacturing, a nationally recognized model for workforce alignment. Detailed information on these key initiatives are included in Appendix C. Space Coast stakeholders could benefit from visiting and learning from these models.

Part 4: Tactics and Measures

Workforce Intelligence Report Implementation

To effectively respond to the workforce needs identified by regional employers across aerospace, aviation, defense, and advanced manufacturing, a phased implementation strategy is required. The following are recommended tactics and goals with suggested measures for Eastern Florida State College (EFSC) to align, expand, and innovate its training offerings. Grounded in employer feedback on current and projected labor market demand, these tactics aim to boost enrollment and completion in existing certification programs, integrate industry-recognized credentials into current degrees and certificates, and create new, high-value certification pathways that address critical gaps in the talent pipeline. Each tactic includes measurable milestones to ensure accountability and progress toward closing workforce supply and demand gaps.

Tactic 1: *Boost Enrollment in Existing Certification Programs*

Objective: Accelerate outreach, access, and completion in high-demand certification programs already offered by EFSC.

Examples: Certified Production Technician (CPT), Welding, CNC Machining, A&P Mechanic

Tactic 2: *Integrate Industry Certifications into Existing Programs*

Objective: Embed nationally recognized credentials into current degrees and certificates to improve alignment with employer needs and enhance program value.

Examples: Embed Certified Composites Technician (SpaceTEC) and ASQ Certified Quality Inspector in Engineering/Aerospace Technology AS Degrees.

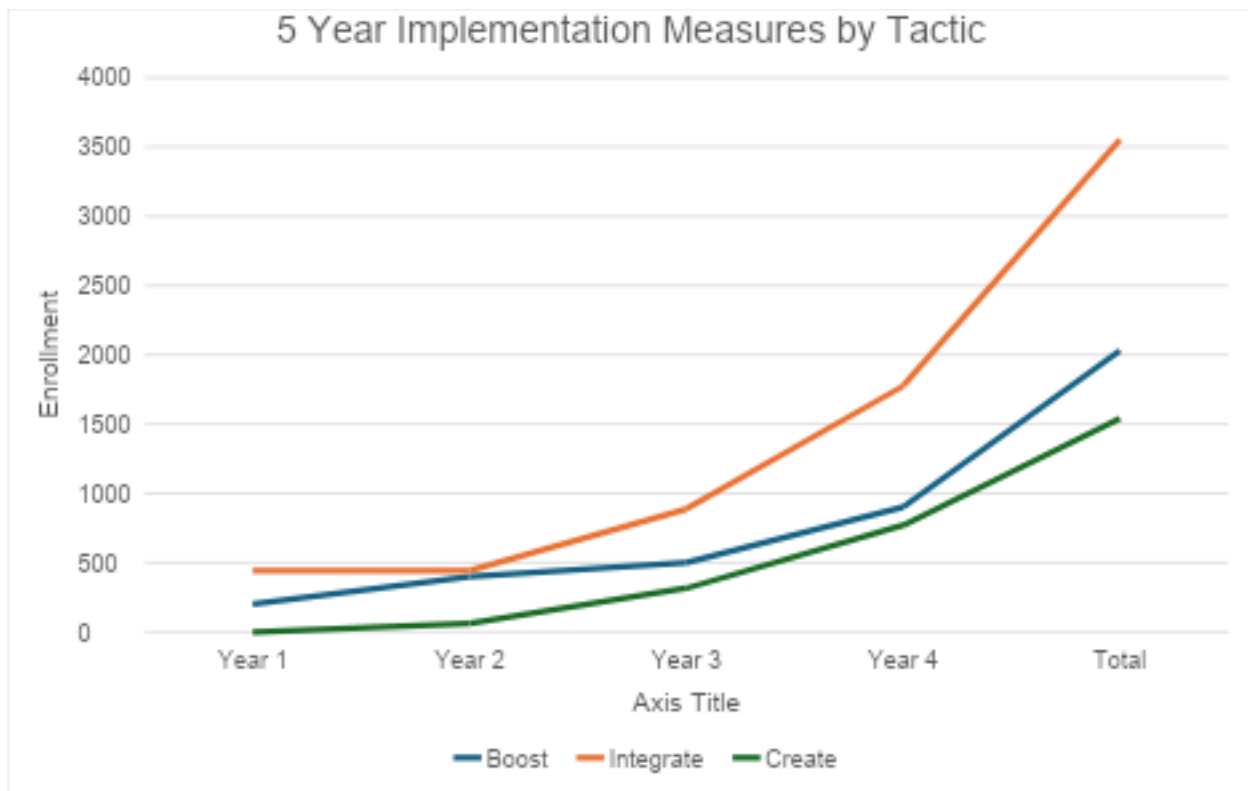
Tactic 3: *Create New Certification Programs to Meet Employer Demand*

Objective: Develop and launch new, short-term training programs for high-skill, high-wage occupations not currently addressed by EFSC.

Examples: Orbital Welding, Robotics, Aerospace Electronics/Avionics

Workforce Intelligence Report Implementation Goals

Tactic / Timeline	2024–2025	2025–2026	2026–2027	2027–2028	2028–2029
Tactic 1: Boost Enrollment in Existing Certification Programs	Verify MCL alignment, expand course offerings, initiate outreach campaign in partnership with CSB and employers	25% enrollment increase	80% credential attainment rate	Maintain 30–40% enrollment growth	Validate job placements; sustained enrollment growth
Tactic 2: Enhance Programs with Embedded Certifications	Curriculum audits to embed certifications, submit to MCL, map courses to certification competencies	Begin curriculum revision in 3+ programs	Launch updated programs; establish baselines	Expand embedded certifications to 6–8 programs	80% credential attainment; scale model college-wide
Tactic 3: Develop New Certification Programs	Prioritize certifications, submit to MCL, pilot through non-credit	Develop 1–2 programs; resource acquisition	Launch pilot cohorts; enroll learners; confirm articulation to degrees	Expand to 4+ programs; formalize pathways	1500+ completions; validate employment outcomes



Part 5: Next Steps and Conclusion

Next Steps

To move from insights to impact, stakeholders must collaborate around clear roles, shared priorities, and aligned investments. The following next steps are recommended to activate the findings of the Workforce Intelligence Report and strengthen the regional talent pipeline.

1. Investigate Strategic Partnerships

- **Initiate structured discussions** with model workforce programs such as AlabamaWorks, Lake Washington Institute of Technology + Amazon Kuiper, and Wichita's Talent Ecosystem.
- **Identify partnership opportunities** for replication or adaptation in Brevard County, focusing on short-term certification delivery, employer co-design, and credential alignment.
- **Conduct site visits or virtual briefings** with national model stakeholders to learn implementation strategies and success factors.

2. Define Roles and Responsibilities

Identify current hurdles for implementation. Establish clear ownership to overcome hurdles and leadership for workforce initiatives by defining the specific contributions of core stakeholders:

Stakeholder	Key Roles and Responsibilities
CareerSource Brevard	Lead talent outreach, career navigation, and wraparound support services; integrate certifications into WIOA-funded programs; support new certification additions to the MCL.
Economic Development Commission (EDC)	Convene partners at regular cadence to support solutions and assist with implementation of findings. Support employer education of certification value.
Brevard Public Schools (BPS)	Expand awareness of high-demand careers; align CTE programs with industry certifications and pathways to EFSC.
Industry Partners	Participate in curriculum design, provide work-based learning and mentorship, and validate credential outcomes.
Eastern Florida State College (EFSC)	Implement training roadmap strategies, embed certifications, and develop new credential programs to close gaps. Create an educational series to inform employers about the benefits of hiring candidates with certifications.

3. Establish Accountability Cadence

- Launch a Workforce Alignment Meeting with representatives from CareerSource, EDC, BPS, EFSC, and key employers.
- Track progress using shared metrics such as:
 - Enrollment in targeted programs
 - Certification attainment rates
 - Job placement outcomes
- Conduct semi-annual education/employer convenings on current and evolving skills, credentials and competencies.
- Develop a local tracking method to monitor progress on certification and job placement rates.

Conclusion

The *Space Coast Workforce Intelligence Report* provides a functional blueprint for Industry Training and Certification. The blueprint offers a focused, data-informed strategy to close critical workforce gaps and strengthen the region’s capacity to meet the talent needs of high-growth industries. Grounded in direct employer input and labor market intelligence, this blueprint outlines actionable steps to align training with industry demand, accelerate credential attainment, and foster stronger collaboration between educators and employers. With clear metrics and quarterly engagement built into its framework, the blueprint ensures accountability, adaptability, and long-term impact—positioning the Space Coast as a national model for workforce readiness and economic resilience.

Appendix A

Project Timeline

The table below provides a detailed description of the project timeline, outlining the key stages, activities, and corresponding start and end dates for the workforce development initiative.

Stage	Description	Start Date	End Date
Aug 2024 – EDC provides EFSC with the study concept and approach	Initial study concept and approach provided to EFSC	August 2024	August 2024
Sep 2024 – Companies selected, and employer outreach initiated to identify interview participants	Outreach to select companies for interview participants	September 2024	September 2024
Oct 2024 – Structured interviews officially launched	Official launch of structured interviews	October 2024	October 2024
Oct 2024 – April 2025 – 16 employer interviews completed	Completion of 16 employer interviews	October 2024	April 2025
Jan – Mar 2025 – Credentials explored and mapped to skills	Exploration and mapping of credentials to skills	January 2025	March 2025
Mar – Apr 2025 – Findings synthesized into skills and certification recommendations	Synthesis of findings into skills and certification recommendations	March 2025	April 2025
Apr – May 2025 – Final report development and stakeholder review	Development of final report and stakeholder review	April 2025	May 2025
June 4, 2025 – Final report presented to EDC Board of Directors	Presentation of final report to EDC Board	June 2025	June 2025
Summer 2025 – Launch of Phase Two planning: outreach, capacity building, and implementation	Planning for Phase Two, including outreach and capacity building	Summer 2025	Summer 2025

Appendix B

Workplace Essential Competencies and Foundational Skills

All the employers interviewed identified both **Workplace Essential Competencies** and Shared **Foundational Technical Skills** necessary for employees across all industries in the study group. These competencies and skills are universal across all the industry sectors and occupations within the industries. The following competencies and skills are essential for a wide array of entry- and mid-level positions. Education and training entities should be diligent to ensure these competencies and skills are integrated into foundational training to ensure the development of critical skills across various sectors:

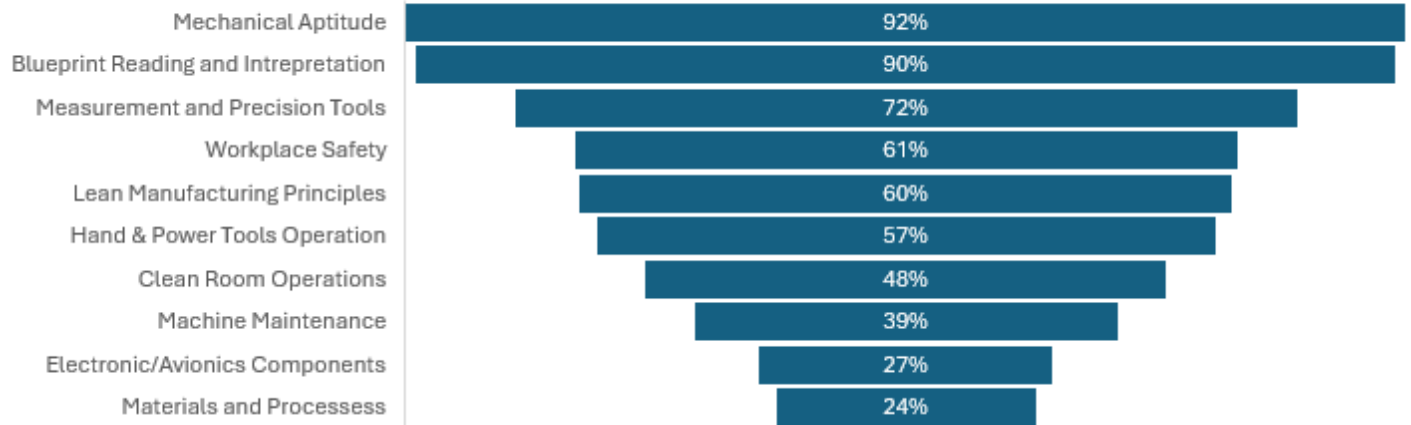
Workplace Essential Competencies

- Adaptability and flexibility
- Critical thinking
- Communication
- Team player
- Detail-oriented
- Work ethics
- Self-initiative
- Time management
- Customer service
- Security clearance

Shared Foundational Technical Skills

- Basic mechanical aptitude
- Blueprint schematic reading and interpretation
- Workplace safety protocols and procedures
- Cleanroom protocols and contamination control
- Basic electronic/avionics component familiarity
- Hand and power tools operation and maintenance
- Equipment operation, testing and maintenance
- Quality control and inspection principles
- Lean process principles
- Certified Production Technician

Basic Technnical Skills Reported by 18 Employers Interviewed



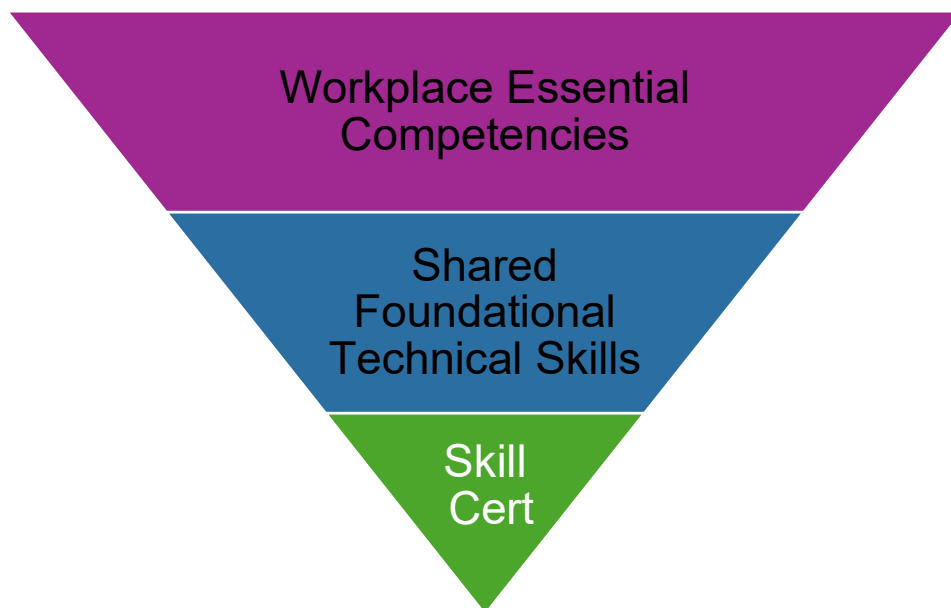
1. **Mechanical Aptitude:** the ability to understand, comprehend, and apply mechanical principles to solve problems related to machines, tools, and systems.
2. **Blueprint Schematic Reading and Interpretation:** This skill is the most highly prioritized by employers, indicating the need for workers proficient in interpreting complex schematics and blueprints.
3. **Measurement and Precision Tools:** Instruments used to quantify and compare physical properties with a high degree of accuracy and repeatability.
4. **Workplace Safety:** The measures and practices implemented to protect the health and well-being of employees in their work environment.
5. **Lean Manufacturing Principles:** Lean principles are valued for improving efficiency, reducing waste, and optimizing production processes.
6. **Hand and Power Tools Operation:** Hand tools are operated manually, and examples include hammers, screwdrivers, wrenches, and more. Power tools, on the other hand, are electrically powered equipment such as drills, saws, and sanders.
7. **Clean Room Operations:** a controlled environment designed to minimize airborne particles, contaminants, and pollutants to maintain a high level of cleanliness.
8. **Machine Maintenance:** All activities performed to keep equipment and machinery in good working order, preventing breakdowns, extending lifespan, and minimizing downtime.
9. **Electronic/Avionics Components:** The avionics installed in an aircraft or spacecraft can include engine controls, flight control systems, navigation, communications, flight recorders, lighting systems, threat detection, fuel systems,

electro-optic (EO/IR) systems, weather radar, performance monitors, and systems that carry out hundreds of other mission and flight management tasks.

10. **Materials and Processes:** The study and application of materials, including their properties, behavior, and how they are transformed into useful forms through various manufacturing processes.

The Competencies and Skills Hierarchy below outlines the relationship for successful career entry and advancement.

Competencies and Skills Hierarchy



These core competencies and skills build the foundation for occupational technical skills for specific jobs with aerospace, aviation and manufacturing environments.

Defining Skills, Credentials, and Competency

While industry and education leaders recognize the need for strategic collaboration, inconsistent terminology often creates confusion. This report establishes clear definitions of job skills, credentials, certifications, and competencies to align education and training with industry needs. A shared language enables more effective program design, streamlined career pathways, and stronger alignment with workforce demands in high-growth sectors such as aviation, aerospace, and manufacturing on the Space Coast.

Job Skills

Definition: Job skills are the abilities or knowledge needed to do a specific type of work.

Example: In aerospace manufacturing, being able to safely use precision measurement tools or interpret technical drawings are essential job skills.

Credential

Definition: A credential is proof of completed education or training, such as a certificate, diploma, or degree that shows someone has prepared for a field.

Example: Completing a 12-month Aerospace Technology certificate program at a college gives someone a credential that prepares them for entry-level jobs in aircraft assembly or maintenance.

Certification

Definition: A certification is a nationally recognized validation that someone has passed an exam or assessment to meet industry standards for a job role.

Example: An FAA Airframe & Powerplant (A&P) Certification proves a technician is qualified to inspect and repair aircraft — a requirement for many aviation maintenance positions.

Competency

Definition: A competency is the ability to apply a specific skill, knowledge, or behavior to perform a task successfully and consistently in the workplace.

Example: A certified aerospace technician demonstrates the competency to follow safety protocols and conduct quality inspections independently in a real-world manufacturing environment.

Appendix C

Best Practices in Action

Three workforce development best practices provide exemplary strategies for engaging employers and educators to increase human capital in related sectors. Space Coast stakeholders will benefit from visiting and learning about these models as they provide training roadmaps for careers in aviation, aerospace, manufacturing, composites, and satellite technology. A roadmap for each industry should outline entry, mid, and advanced career pathways with training timelines and certifications at each stage.

Spotlight ONE: AlabamaWorks – A Model for Regional Workforce Alignment

To close critical skills gaps and boost credential attainment, Alabama launched **AlabamaWorks**, a statewide initiative built on regional employer-led councils, streamlined training pathways, and clear credentialing goals.

Through seven **Regional Workforce Councils**, AlabamaWorks connects employers directly to education and training providers, ensuring programs align with real job market needs. The initiative also set a “Success Plus” goal to add 500,000 credentialed workers by 2025, with a strong focus on short-term, stackable credentials.

Key Features:

- Employer-driven training priorities in advanced manufacturing, aerospace, healthcare, and skilled trades
- Centralized job and resource portal (**AlabamaWorks.com**)
- Real-time data tools to track outcomes and inform funding decisions

Why It Matters for the Space Coast:

This demonstrates how regional coordination, employer engagement, and credential-driven strategies can build a more agile and inclusive workforce system, an approach well-suited for the Space Coast’s aerospace and advanced manufacturing sectors.

Employer Led Strategy to Address Workforce Shortage

Spotlight TWO: Lake Washington Institute of Technology + Amazon Kuiper

Building a Rapid-Response Talent Pipeline for Satellite Manufacturing

To address its growing need for skilled satellite assembly technicians, Amazon’s Project Kuiper partnered with Lake Washington Institute of Technology (LWTech) to co-design a short-term, high-impact training program focused on satellite component assembly, electronics integration, and cleanroom operations.

The result was a six-week, cohort-based program that prepares learners for immediate employment through hands-on training and industry-recognized certifications (e.g., IPC J-STD-001, WHMA-A-620). Delivered in a simulated aerospace production environment, the program directly aligns with Project Kuiper’s hiring needs.

Key Outcomes:

- 90% placement of graduates within 30 days
- Expansion into advanced training and upskilling
- Recognized as a replicable model for high-tech manufacturing workforce pipelines

Why It Matters for the Space Coast:

This example indicates how employer-designed, short-term credentialing programs can rapidly address workforce shortages in aerospace and advanced manufacturing—and offers a promising model for replication on Florida’s Space Coast.

Community Collective for Workforce Development

Spotlight THREE: Wichita's Talent Ecosystem for Aerospace and Advanced Manufacturing

Wichita Workforce Alliance: Aligning Regional Talent to Industry Innovation

Wichita, Kansas, known as the **Air Capital of the World**, has established a nationally recognized model for workforce alignment through the Wichita Workforce Alliance and its partners. Faced with growing talent shortages in aerospace and advanced manufacturing, the region launched a coordinated initiative to expand talent pipelines, modernize technical training, and accelerate credential attainment.

The effort is driven by strong collaboration among local employers (including Spirit AeroSystems and Textron Aviation), public schools, community colleges, and economic development agencies.

Key Initiatives:

- Aviation Pathway Programs in high schools that lead directly to technical certifications and dual credit opportunities at Wichita State University Tech (WSU Tech).
- Expansion of non-credit training programs tied to industry needs, such as composites, CNC machining, and aircraft assembly.
- Integration of registered youth apprenticeships, creating early exposure and clear entry points into the workforce.

Use of labor market intelligence to guide program design and align resources with high-demand, high-wage occupations.

Why It Matters for the Space Coast:

Wichita built a cohesive, data-driven talent ecosystem that connects K-12, postsecondary, and industry stakeholders—serving as a replicable model for regions facing similar aerospace and manufacturing workforce gaps.

Appendix D

Detailed Information about Certifications in Table 4

Certified Composites Technician by ACMA: Developed for aerospace and high-performance composites industry manufacturing and repair professionals. It provides a national composites certification standard to meet industry identified skill areas for current and future advanced composites professionals. 35 hours of hands-on training required.

Basic Composites Certification by SpaceTEC: A three-part exam consisting of a 70 question, computer based written exam, followed by an oral and practical evaluation of an individual's technical knowledge and skills. The composites examination focuses on the following subject areas: Composites Knowledge, Fabrication Methods, Inspection, Health, and Safety. To be eligible to sit for the composites certification, a student is required to have already passed the SpaceTEC core certification for entry-level employees covering general knowledge in six areas: Introduction to Aerospace, Applied Mechanics, Basic Electricity, Test and Measurements, Materials and Processes and Aerospace Safety.

Airframe & Powerplant (A&P) by FAA: Work in highly technical specialty occupations involving the continued operational safety of products and articles, keeping U.S.-registered aircraft operating safely and efficiently. AMTs hold highly transferable skills that can be used in a broad range of industries; career opportunities in the aviation sector include employment at airlines, fixed-base operators, manufacturers, repair stations, aviation maintenance schools, business, or general aviation. Specialty fields include avionics, balloons, airships, rotorcraft, and unmanned aircraft systems. 30 months of practical experience required to sit for the exam.

Certified Quality Inspector CQI by American Society for Quality: The Certified Quality Inspector is an inspector who, in support of and under the direction of quality engineers, supervisors, or technicians, can use the proven techniques included in the American Society for Quality handbook. Under professional direction, the quality inspector evaluates hardware documentation, performs laboratory procedures, inspects products, measures process performance, records data and prepares formal reports. Three years of full-time paid experience required. Two years of experience is waived if a two-year degree is completed.

IPC-A-610: Acceptability of Electronic Assemblies by IPC: The widely used standard for determining the acceptability of electronic assemblies. It provides clear criteria for evaluating the quality and workmanship of electronic assemblies, ensuring they meet required quality and reliability standards. The standard is used across various industries,

including aerospace, defense, and medical, for ensuring the reliability of electronic products. This certification is currently offered on the Palm Bay campus of EFSC, with a summer 2025 non-credit course that takes three weeks full-time.

Certified Calibration Technician by American Society for Quality: Tests, calibrates, maintains, and repairs electrical, mechanical, electromechanical, analytical, and electronic measuring, recording and indicating instruments and equipment for conformance to established standards. Five years of full-time, paid experience required. Two years of experience are waived if a two-year degree is completed.

J-STD-001 (Soldering) by IPC: Requirements for Soldered Electrical and Electronic Assemblies, has emerged as the preeminent authority for electronics assembly manufacturing worldwide. The standard describes materials, methods and verification criteria for producing high-quality soldered leaded and lead-free interconnections. It emphasizes process control and establishes industry consensus requirements for a broad range of electronic connections. This is available as non-credit at EFSC.

WHMA-A-620 (Cable and Wire Harness) by IPC: prescribes practices and requirements for the manufacture of cable, wire and harness assemblies. The standard describes materials, methods, tests and acceptability criteria for producing crimped, mechanically secured and soldered interconnections, and the related assembly activities (corresponding lacing/restraining criteria) associated with cable and harness assemblies. This is available as non-credit through EFSC.

NASA-STD-8739.4 (High Reliability Aerospace Soldering): Crimping, interconnecting cables, harnesses, and wiring is NASA's workmanship standard for wiring and cabling assemblies for spaceflight hardware and critical ground-support equipment. This course can be completed in 40 hours/5 days. Prior hand soldering experience is highly recommended.

Certified Electronics Technician by ETA International: Designed for encompassing the basic electronics theory and applications used in all electronics disciplines including electrical theory, test equipment, circuits, telecommunications basics, and work procedures. Designed for technicians that have less than two years of work experience or technical education.

Aircraft Electronics Technician by CertTEC: Challenges the candidate to demonstrate their skills and knowledge in measuring, analyzing, and troubleshooting Avionics systems and equipment. It is open to all individuals regardless of age, career field, training, education or experience.

General Radiotelephone Operator License (GROL) by the FCC: Adjust, maintain, or internally repair FCC licensed radiotelephone transmitters in the aviation, maritime, and

international fixed public radio services. It is also required to operate the following: any compulsorily equipped ship radiotelephone station operating with more than 1500 watts of peak envelope power and voluntarily equipped ship and aeronautical (including aircraft) stations with more than 1000 watts of peak envelope power. To earn this certification, it is required to pass two exams with the following information: Element 1 - Basic radio law and operating practice with which every maritime radio operator should be familiar. To pass, an examinee must correctly answer at least 18 out of 24 questions. Element 3 - General Radiotelephone. Electronic fundamentals and techniques required to adjust, repair, and maintain radio transmitters and receivers. The exam consists of questions from the following categories: operating procedures, radio wave propagation, radio practice, electrical principles, circuit components, practical circuits, signals and emissions, and antennas and feed lines. To pass, an examinee must correctly answer at least 75 out of 100 questions.

Aerospace Coatings Application Specialist Certification by SpaceTEC: This certification demonstrates an individual possesses an understanding of the aircraft paint process, has core knowledge of coatings preparation and application, and understands a common language inherent to the technical attributes of aerospace coatings.

American Society for Non-Destructive Testing Level I, II and III: Before someone applies for NDT certification with ASNT, they must document training and work experience they get working as an entry-level assistant or technician. As an uncertified NDT trainee, people work under the supervision of fully qualified technicians and inspectors. This is an opportunity to gain hands-on experience with NDT methods and equipment.

AWS D17.1 Aerospace Welding by American Welder Society: Contains guidelines for fusion welding and non-destructive examination (NDE) of aerospace flight hardware, as well as the welding and NDE of non-flight hardware. To pursue D17.1 certification, the applicant must already be a Certified Welding Inspector or a Senior Certified Welding Inspector.

C-101 Certified Industry 4.0 Associate I by Smart Automation Certification Alliance: Basic Operations certification is an introductory credential that prepares individuals to succeed in modern production environments that use Industry 4.0 controls, automation, and processes. This certification is appropriate for individuals working in any occupation in advanced manufacturing. Appropriate for students in high school or college.

Aviation Structures by CertTEC: A comprehensive assessment of technician skills and knowledge focused on structures knowledge, fabrication methods, health and safety, inspection and repair, and regulations and documentation.

CNC Machining Level 1 by NIMS: An individual with Level I Machining Skills is a skilled machine operator or technician who has demonstrated competence in three major areas of responsibility: 1. basic bench operations 2. basic metal cutting operations 3. basic inspection and quality assurance functions. This individual can perform these responsibilities in both single and multiple part production. Most trainees can acquire the core Level I Machining Skills in six months to one year of education and training, depending on prior manufacturing experience, basic academic skills, mechanical aptitudes, and the availability of laboratory-based training. This training could be given in a high school or community college vocational/technical education program, apprenticeship program, formal company training program, or structured on-the-job training.

Certified SOLIDWORKS Associate by SOLIDWORKS: Designed for users new to the software and has completed a beginner course. This associate level certification proves their fundamental knowledge and basic skills in the software and is suitable for those starting their career or transitioning into a new domain.

Dimensioning and Tolerancing Professional Certification - Technician Level by the American Society of Mechanical Engineers: The Technologist level examination emphasizes the applicant's knowledge of GD&T principles, concepts, and practices in accordance with ASME Y14.5-1994 or ASME Y14.5-2009. Certification indicates that the individual has demonstrated competencies in the understanding of the symbols, modifiers, and relationships of Geometric Dimensioning and Tolerancing (GD&T) as applied to engineering drawings and related documentation. There is no experience requirement. People who should obtain this certification include: CNC operators and machinists, production technicians, and quality technicians.

Certified Logistics Associate and Technician by the Manufacturing Skills Standards Council: Prepares individuals for front-line material handling and supply chain logistics jobs in fulfillment centers, warehouses, distribution centers, and factories. Students must pass the Certified Logistics Associate exam before they can sit for the technician exam. There is no experience requirement.

Certified Forklift Technician by the Manufacturing Skills Standards Council: Certify and recognize individuals who demonstrate core competencies involved in the maintenance, service, and repair of forklift vehicles. The CFT credential will give students and employees the tools to enter career pathways within the material handling industry and demonstrates that an individual has the skills needed to succeed as a forklift technician. There is no experience requirement.

OSHA 10/30 by OSHA: The 10-hour training program is primarily intended for entry level workers. The 30-hour training program is intended to provide workers with some safety responsibility a greater depth and variety of training. All outreach training is intended to

cover an overview of the hazards a worker may encounter on a job site. Training emphasizes hazard identification, avoidance, control and prevention, not OSHA standards.

Detailed Information about High -Demand Skills in Table 4

Composite Materials Fabrication and Repair: Involves creating and restoring structures using materials that combine two or more distinct substances, resulting in unique properties like strength, lightness, and corrosion resistance.

Aircraft Maintenance and Powerplant Systems (A&P): Aircraft maintenance involves the scheduled or unscheduled inspection, repair, modification, or overhaul of an aircraft to ensure it remains safe and airworthy. Powerplant systems, specifically, focus on the engines and related systems that generate thrust.

Quality, Testing and Troubleshooting: Quality testing ensures a product meets specified quality standards and functionality, while troubleshooting identifies and resolves issues to restore a product or process to its expected state. Quality testing focuses on preventing defects and improving the overall product, while troubleshooting addresses specific problems that have already occurred.

Soldering and Wire Harness Assembly: Soldering is a critical step in wire harness assembly, ensuring a secure and reliable electrical connection between wires and terminals. The process involves preparing the wires (stripping insulation), attaching terminals (often by crimping), and then soldering the connections. After soldering, the harness is routed, bundled, tested, and inspected to ensure proper functionality and quality.

Avionics/Electronics: The electronic systems and equipment used in aircraft, spacecraft, and satellites. It encompasses a wide range of functions, including communication, navigation, flight control, and various other mission-critical systems.

Aircraft Painting: The process of applying a paint scheme to an aircraft's exterior and interior surfaces. This process serves both aesthetic and functional purposes, enhancing the visual appearance, protecting the aircraft from corrosion, and aiding in identification.

Non-Destructive Testing: refers to various inspection techniques used to evaluate the properties of materials, components, or systems without causing damage or impairing their functionality.

Industrial, Orbital, and Aerospace Welding (TIG/MIG): TIG welding finds its place in crafting delicate aircraft components, such as fuel tanks and exhaust systems. MIG welding, on the other hand, is often employed for structural elements like frames and

brackets, where speed and durability are paramount. Orbital welding automates both TIG and MIG welding processes, using specialized machines to rotate the welding head around the workpiece (pipe or tube). This ensures consistent, repeatable welds with minimal operator intervention.

Robotics and Automation Support: Automation is the process of using technology, like machines or software, to perform tasks that would otherwise be done by humans. Robotics, on the other hand, focuses on the design, creation, and use of robots, which are physical machines that can perform tasks. While robotics is a form of automation, automation can also involve other technologies besides robots.

Aerospace Sheet Metal and Structural Assembly: In the aerospace industry, sheet metal fabrication refers to the process of creating and assembling metal parts from sheets of metal, typically using methods like cutting, bending, and joining. Aerospace structural assembly involves the integration of these sheet metal components, along with other structural elements, to build the complete aircraft or spacecraft.

CNC Machining and Precision Manufacturing: CNC (Computer Numerical Control) machining is a manufacturing process that uses computer-controlled machine tools to precisely shape raw materials into finished parts, often with high accuracy and repeatability. Precision machining is a broader term that refers to the creation of highly accurate parts with extremely tight tolerances, often requiring the use of CNC machines and advanced tools.

Blueprint Reading and Geometric Dimensioning and Tolerance: Blueprint reading involves interpreting technical drawings to understand a part's geometry and dimensions, while geometric dimensioning and tolerancing (GD&T) is a system of symbols used on those drawings to communicate allowable variations in the part's geometry, size, and location. GD&T ensures parts fit together correctly and function as intended.

Logistics and Material Handling: Logistics is the management of resources to meet customer needs, while material handling focuses on the physical movement and storage of goods within a supply chain.