Bridging the Talent Gap to Power the Workforce of Tomorrow

THE ROOTS REGISTERED APPRENTICESHIP PROGRAM

State of Florida

Approved Occupation: Robotics Technician

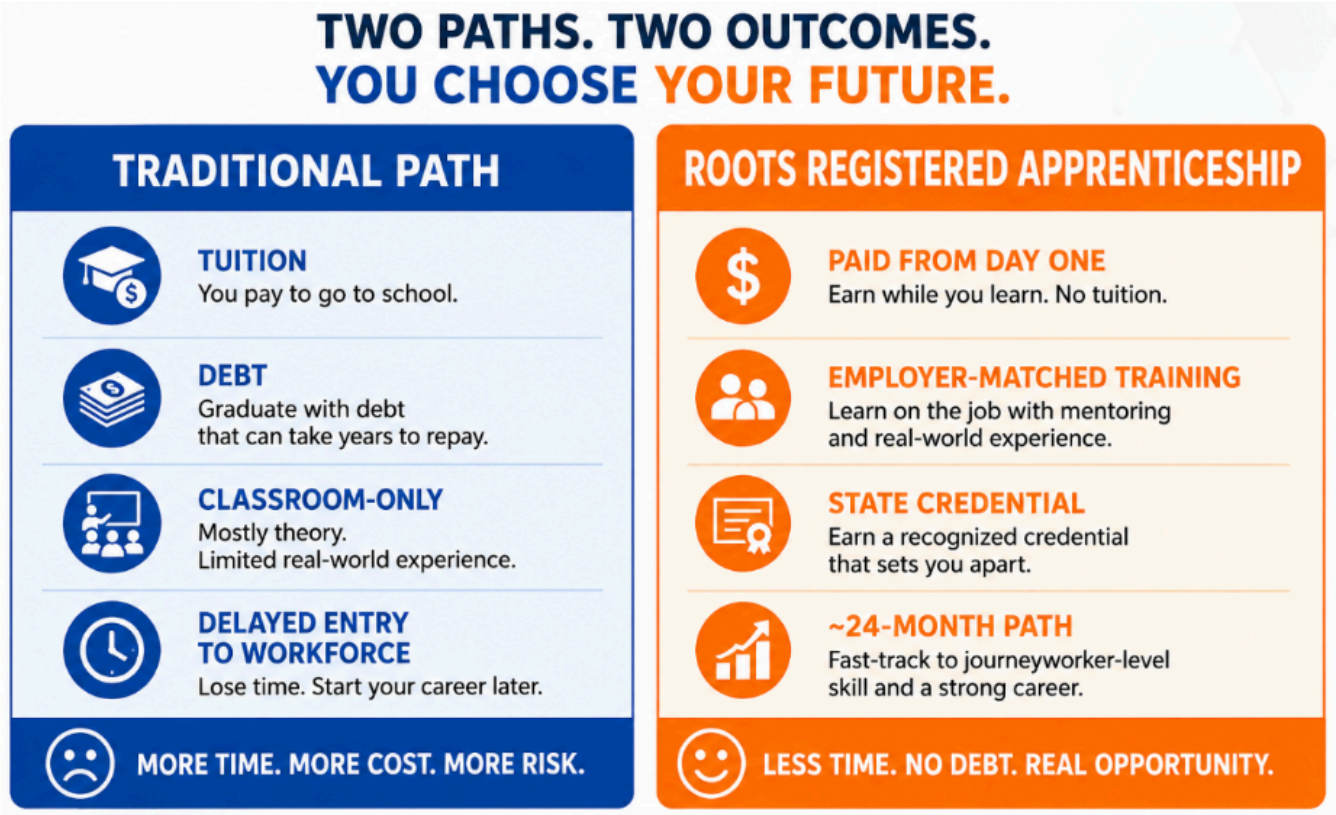
Apprenticeship Interest Form:

WHAT IS REGISTERED APPRENTICESHIP?

A Registered Apprenticeship is a formal, state-approved training model that combines paid On-the-Job Training (OJT) under an experienced journeyworker with Related Technical Instruction (RTI) — structured classroom or online coursework tied directly to the occupation. Apprentices are employees, not students in the traditional sense: they're hired, paid, and progress through a documented wage schedule as they master defined competencies, until they earn a state-registered Certificate of Completion of Apprenticeship.

WHY ADVANCED MANUFACTURING NEEDS IT

Robotics, semiconductor fabrication, PLC-driven automation, and Industry 4.0 systems require skills that most traditional degree timelines can't keep pace with. ROOTS apprenticeships close that gap: employers train technicians on their own equipment, on a documented, state-recognized standard, while apprentices earn a paycheck and a credential instead of a tuition bill — a future-proof investment for everyone at the table.



WHY PARTNER WITH ROOTS?

- **State-Approved Sponsor:** Registered Apprenticeship Program #2026-FL-137686, approved by the Florida Department of Education, Division of Career and Adult Education, Apprenticeship Section — effective December 18, 2025.
- **Built By Students, Designed By Educators, Influenced By Industry:** ROOTS Engineering is an engineering-services-for-hire firm specializing in robotics, automation, and advanced manufacturing. Curriculum is developed by our partners at ROOTS Education Co., alongside our own CAROL 4.0, Cobot Integration & Processing, and Semiconductor & Automation Technology certifications.
- **College Partnerships:** Technical colleges who partner with ROOTS earn FTE funds through workforce development enrollment and positive job placement data for their accreditation.
- **Insured and Compliant:** ROOTS carries $1M per-occurrence / $3M aggregate general and professional liability coverage as part of its education partner agreements.
- **Two Registered Occupations Ready Today:** Robotics Technician and Semiconductor Manufacturing Technology/Technician, each with a documented work-process schedule, wage progression, and RTI curriculum already on file with the state.
- **Customization:** ROOTS will build customized RTI to meet the unique needs of your company.

MESSAGE FROM ROOTS

"ROOTS was founded on one idea: We Innovate to Educate. We saw advanced manufacturing equipment outpacing the technicians available to run it, and instead of just consulting on that gap, we set out to close it."

"In December 2025, ROOTS Engineering Services, LLC became an approved Registered Apprenticeship Program Sponsor with the Florida Department of Education. Today we sponsor two registered occupations, Robotics Technician and Semiconductor Technician, with curriculum developed by our partners at ROOTS Education Co. Every apprentice earns a wage from day one, works alongside our engineers and yours, and graduates with a state-registered credential — one part of a multi-certification pathway that stacks with our own industry certifications."

"Whether you're an employer who needs technicians trained on your equipment, a student looking for a debt-free path into a high-tech career, or a school or agency building your region's workforce pipeline — this is a Future-Proof Investment we're ready to grow together, into new counties and occupations, with the right partners."

— Justin Erickson, Vice President of Operations, ROOTS Engineering Services, LLC

HOW THE ROOTS APPRENTICESHIP MODEL WORKS

Every ROOTS apprentice moves through three connected components at once:

- **On-the-Job Training (OJT):** Paid, supervised work experience with a qualified journeyworker at a participating employer, building toward a defined total-hours requirement specific to the occupation.
- **Related Technical Instruction (RTI):** A minimum of 144 hours per year of structured coursework delivered in a hybrid model (online and in-person) through ROOTS or a partner technical college enhancing the technical knowledge behind the OJT work. ROOTS can build customized RTI to meet your business's unique skills.
- **Credentialing:** Upon completing both, the apprentice earns a state-registered Certificate of Completion of Apprenticeship from the Florida Department of Education — one step in a multi-certification pathway recognized across Florida's registered apprenticeship system.

EMPLOYER RESPONSIBILITIES

- Hire and pay the apprentice
- Assign a qualified journeyworker to supervise OJT
- Maintain a 3:1 apprentice-to-journeyworker ratio
- Document and approve OJT hours and competencies
- Provide safe working conditions and required safety training
- Support the apprentice's release time for RTI where applicable

APPRENTICE RESPONSIBILITIES

- Complete the required OJT and RTI hours
- Meet minimum eligibility (age 18+, HS diploma/GED, ability to lift/carry 50 lbs, English proficiency for safety and instruction)
- Complete a 90-day probationary period
- Follow all safety standards
- Maintain satisfactory performance and attendance in both OJT and RTI
- Work toward the Certificate of Completion of Apprenticeship

OCCUPATION DETAILS

Robotics Technician	
O*NET / RAPIDS	17-3024.01 / 3002CB
OJT hours / duration	4,000 hours (~24 months / 2 years)
RTI hours	334 hours (over 2 years)
Focus areas	PLC integration, robot programming, industrial assembly, repair & maintenance, digital twin, cybersecurity basics
Wage progression*	$18/hr (0–2,000 hrs) → $20/hr (2,001–4,000 hrs)
RTI Delivery	Hybrid: online and in-person

**Based on a $26/hr journeyworker reference wage on file with the state as of late 2025*

RELATED TECHNICAL INSTRUCTION DETAILS

*NOTE: Customized RTI is available upon request through ROOTS.

<u>Year 1: Foundations of Industrial Automation</u>

Focus: Safety, Mechanical Systems, and Electrical Fundamentals.

Module 1	Safety & Professionalism	Hours	10
• Identify workplace hazards and follow OSHA 10 guidelines • Execute proper energy isolation procedures for robotic work cells • Understand safety zones, light curtains, and emergency stop circuits			

Module 2	Industrial Electricity & Electronics	Hours	90
• Calculate voltage, current, and resistance in industrial circuits • Install and wire relays, contactors, and sensors • Analyze semiconductor devices and closed-loop control systems • Use multi-meters and oscilloscopes to diagnose circuit failures			

Module 3	Mechanical & Fluid Power Systems	Hours	35
● Maintain gears, belts, bearings, and linkages ● Interpret fluid power schematics and maintain actuators ● CAROL 4.0 Industry Certification practice test			

In-Person	Hands-on Classroom Instruction	Hours	32
RISE: Plus ● Electrical enclosures and wiring ● Machine vision, sensors, and pneumatics ● Equipment assembly and system integration ● Robot programming			

Earned	Year 1 Credentials
● CAROL 4.0 Industry Certification ● Robotics Technician Year One Certificate of Completion	

Year 2: Advanced Robotics, PLCs, & AI Integration

Focus: Programming, Troubleshooting, and Modern AI Implementation

Module 4	PLC & Robot Programming	Hours	**65**
● Develop ladder logic for sequential industrial processes ● Program robot motion using Teach Pendants (Point-to-Point vs. Continuous) ● Configure grippers and sensors for specific manufacturing tasks			

Module 5	Digital Twins & Simulation	Hours	**10**
● Simulate robot programs using digital twin tools to prevent collisions			

Module 6	Artificial Intelligence & Data Management	Hours	30
● Clean and label production data for AI model training ● Train and validate ML models to optimize robotic throughput ● Use AI tools to predict system failures before they occur			

Module 7	Cybersecurity & System Maintenance	Hours	30
• Protect industrial networks and AI interfaces from cyber threats • Perform root-cause analysis on integrated PLC-Robot-AI systems			

In-Person	Hands-on Classroom Instruction	Hours	32
• PLC integration • End of arm tools • Robot programming			

Earned	Year 2 Credentials
• Robot Programming Certification • Robotics Technician Journeyworker Certificate	

EMPLOYER IMPLEMENTATION

1	**Consultation**	Discuss your equipment, roles, and hiring needs with ROOTS
2	**Sponsor agreement**	Sign a *Participating Employer Agreement* with ROOTS's (no need to register your own program)
3	**Recruit or designate apprentices**	Hire new apprentices or enroll existing employees
4	**Assign a Journeyworker & begin OJT**	ROOTS provides the documentation framework
5	**Coordinate RTI enrollment and access**	Through ROOTS or a partner technical college
6	**Track progress**	ROOTS maintains the required records

APPRENTICE JOURNEY

1	**Meet minimum eligibility**	18+ years old, HS diploma/GED, can lift/carry 50+ lbs., and can read/write/speak English
2	**Submit an interest form**	Complete the form online HERE
3	**Get matched with an employer**	ROOTS shares your resume with businesses
4	**Get hired and begin paid OJT**	Once employed, your OJT clock starts when you are an officially registered apprentice through ROOTS (and if applicable, your technical college)
5	**Start RTI coursework**	Begin working through RTI requirements
6	**Complete the 90-day probationary period**	Successfully finish 90 days in good standing
7	**Advance through the program**	Continue employment and RTI progress
8	**Earn credentials & wage increases**	Complete the program requirements

FUNDING MECHANISMS

ROOTS partners with technical colleges, regional workforce boards like CareerSource, and the Florida Department of Education's Apprenticeship office to build a documented, fundable pipeline into advanced manufacturing careers.

- **Technical College partners** retain 100% of District Workforce Education Funding and Performance-Based funding tied to apprenticeship FTE enrollment and industry certifications earned. Apprentices must complete the technical college's registration procedures.
- **Every Apprentice is employed from day one**, counting as a positive placement outcome for accreditation and workforce reporting.
- **The multi-certification pathway** is designed to support grant funding justification for education partners.
- **Potential employer incentives include** state/federal apprenticeship tax credits, grant eligibility, and cost reimbursement for program participation through regional workforce boards.

OUTCOMES AND REPORTING

ROOTS maintains all required Florida Division of Workforce Development Office of Apprenticeship (DWDA) and Department of Education training records, including OJT credential files, for every apprentice and participating employer, and reports program status to its assigned Apprenticeship Training Representative.

- **Is this a real job or a school program?** Both — apprentices are hired, paid employees who also complete required coursework.
- **How long does it take?** The Robotics Technician registered occupation is a 2-year program and requires 4,000 OJT hours.
- **What does it cost an employer?** Employers pay apprentice wages during OJT — ask during your consultation about current partnership terms and funding options.
- **Who is eligible?** Applicants must be at least 18, hold a high school diploma or GED, meet physical requirements (ability to lift/carry 50 lbs), and meet English-language requirements for safety and instruction. Veterans with qualifying discharge status and Florida Registered Preapprentice graduates receive selection priority.
- **Where is this available?** Employers and schools anywhere in Florida can participate.

READY TO BUILD YOUR PIPELINE?

ROOTS maintains all required Florida Division of Workforce Development Office of Apprenticeship (DWDA) and Department of Education training records, including OJT credential files, for every apprentice and participating employer, and reports program status to its assigned Apprenticeship Training Representative.

- **Employers:** Schedule an Apprenticeship Consultation.
- **Prospective Apprentices:** Submit an Apprentice Interest Form (QR Code Below).
- **Colleges & Training Providers:** Schedule an Apprenticeship Consultation.
- **Workforce Boards & State Agencies:** Request a Program Briefing.

ROOTS Engineering Services, LLC
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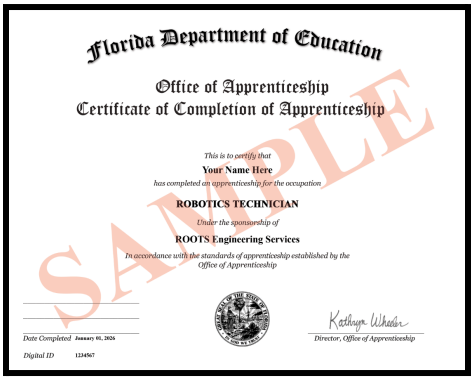
apprenticeships@rootsengineering.com

ROOTS
ENGINEERING SERVICES

Sample Certificate:


Florida Department of Education

Office of Apprenticeship
Certificate of Completion of Apprenticeship

This is to certify that
Your Name Here
has completed an apprenticeship for the occupation
ROBOTICS TECHNICIAN
Under the sponsorship of
ROOTS Engineering Services
In accordance with the standards of apprenticeship established by the Office of Apprenticeship

SAMPLE

Date Completed January 01, 2026
Digital ID 1234567

Kathryn Wheeler
Director, Office of Apprenticeship