

Pathway to Success:

This curriculum is structured into three full-year **Honors Level** courses, guiding students from foundational concepts to advanced Industry 4.0 mastery.

Year 1: Advanced Manufacturing Fundamentals

- Students build a foundation in modern industrial practices, mastering safety, CAD, 3D printing, CNC basics, robotics, fundamental smart automation, and applying team-based problem-solving and systems-thinking to integrated components.

Year 2: Automation, Mechatronics, and Digital Systems

- Students master the integration of automated systems, focusing on Mechatronic Systems, industrial automation through Programmable Logic Controller (PLC) programming, and Digital Manufacturing Systems including Networking, Robotics integration, CAM, and Cloud-Based Data Collection.

Year 3: Materials, IIoT, and Data Analytics

- This course integrates all skills, covering Advanced Materials & Design with advanced CAD/CAM, CNC machining, and welding, culminating in the mastery of IIoT systems, managed networks, Smart Data Analytics, and Cybersecurity for complex, data-driven environments.

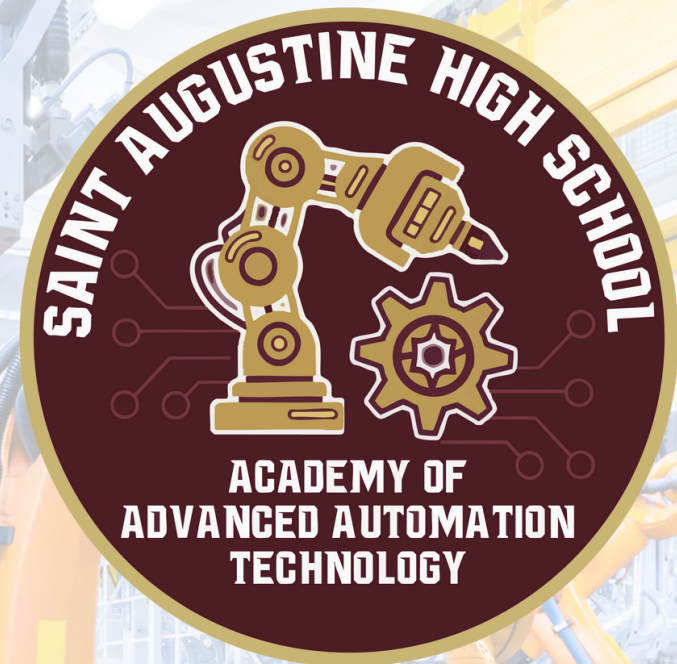
Year 4: Industry Capstone & Dual Enrollment

- Accelerated Credit Pathway: Dual enrollment opportunity for students to pursue Accelerated College Credit.
- Honors Pathway: Students complete an intensive, year-long Industry-Sponsored Capstone Project with an industry partner.



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A copy of Policy 2.16 can be found at http://www.stjohns.k12.fl.us/board/wp-content/uploads/sites/11/2015/02/2_16.pdf
Rules and Policies are at each school location including the District Office at 40 Orange Street.



Mission Statement

To provide a small learning community for students to explore careers in Industry 4.0, Advanced Manufacturing, and Automation. Students will develop the essential technical and collaborative skills necessary to become career and college ready in a technology-driven world.

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IGNITE Curriculum

IGNITE is a competency-based program, developed in collaboration with Manufacturing USA Institutes (LIFT, America Makes, and MxD) and funded by the **U.S. Department of Defense**, designed to stimulate student interest in Advanced Manufacturing/Industry 4.0 careers. Its curriculum is a perfect blend of **career exploration, creative learning, and skill development**, aligning with industry-recognized certifications. Through creative project-based learning and a structured curriculum utilizing hands-on Industry 4.0/IIoT technology and virtual environments, IGNITE develops critical skills in systems-thinking and team problem-solving, preparing students for the many careers in the field.



High-Tech Industry

The Academy of Advanced Automation Technology offers a smart and secure path for high school students looking for a **successful career** right after graduation or college in Advanced Manufacturing. The Jacksonville region is a massive hub for this high-tech industry, employing **nearly 39,000 professionals** in stable, future-proof jobs. Many advanced manufacturing-related careers offer **high median salaries**, such as Industrial Engineers making \$102,900 and Aerospace Engineering Technologists earning \$83,400

Recognized Certifications

Industry-recognized certifications like the MSSC (Manufacturing Skill Standards Council) and the SACA (Smart Automation Certification Alliance) are essential tools for high school students looking to become immediately marketable in Advanced Manufacturing.

- The MSSC Certified Production Technician (CPT) credential is a nationally portable "Gold Standard" that validates **foundational skills** in four core areas: Safety, Quality, Manufacturing Processes, and Maintenance.
- SACA certifications validate the **advanced technical skills**—known as "connected systems" or Industry 4.0 skills—that employers need to manage modern automation, robotics, and smart factory technologies.

Project-Based Learning

Project-Based Learning is how students master the newest manufacturing technology. Students tackle team-based projects where they design and build working prototype devices, which forces them to apply core technical skills. They learn to use **CAD/CAM software** for design, produce physical parts with **3D Printing**, and use **Smart Sensors** and **Ethernet Networking** to connect systems and manage data, all while writing the necessary **Programming logic** (HMI/PLC). This hands-on, problem-solving approach directly translates classroom knowledge into valuable, job-ready experience.

Workforce Demand

The Academy of Advanced Automation Technology prepares students for career opportunities with the **Top Employers** in the **Jacksonville region**. The list of major companies includes: Collins Aerospace, Georgia-Pacific, BAE Systems, WING Group, Ring Power CAT, Niagara, Boeing, Northrop Grumman, and Johnson & Johnson.

These diverse companies represent major sectors like **Aerospace & Defense, Metal Products, and Medical Device** manufacturing. Students gain the technical skills and professional training needed to become highly marketable to these industry leaders, securing a **stable, high-value future** in a thriving industry.

