



BotsIQ is a youth workforce development program of the Pittsburgh Chapter National Tooling & Machining Association that was created by manufacturers to solve its biggest issue: **recruiting a skilled workforce.**

Through BotsIQ, quality STEM and robotics programming is offered year-round to students at public and private schools, homeschools, and qualified youth organizations across southwestern Pennsylvania—free of charge.

15,000+

students impacted
by BotsIQ's programs



www.botsiqpa.org



BOTS **SIQ**
Building the
future of
manufacturing



--- HANDS-ON LEARNING

COMBAT ROBOTICS

Launched in **2005**, this is BotsIQ's signature high school program. With expert guidance from their teachers and industry mentors, BotsIQ students work in teams during the academic year to design and build 15 lb. combat robots (bots) to battle in a gladiator-style competition.

The competitions are something that the students can get excited about, but the real-world goal of BotsIQ is to provide a setting where students develop in-demand, technical skills in **mechanical and electrical engineering, machining, and welding**. BotsIQ connects these skills to future careers with a variety of career related experiences such as company tours, job shadow experiences, professional interviews, and internships.



In addition to technical skills, BotsIQ students also report developing many professional skills including project management, teamwork, leadership, problem solving, and critical thinking.

COBOT CHALLENGE

Using LEGOs, middle school students work in pairs to assemble and program a cobot arm to complete challenges. The BotsIQ Cobot Challenge introduces students to the in-demand technical skills that they can further develop in our high school combat robotics program.



----- TECHNICAL TRAINING

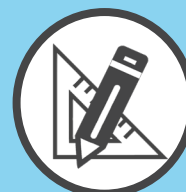
BOTSIQ ACADEMY

Students are provided an extra opportunity to increase their technical knowledge through BotsIQ's advanced online curriculum in BotsIQ Academy. Launched in **2018** and offered at no cost to the school or student, BotsIQ Academy utilizes online educational platforms such as Tooling U-SME, SolidProfessor, and Mastercam University, to deliver industry-based curriculum in areas such as **basic measurement and math, blueprint reading, safety, and Computer-Aided Design**.

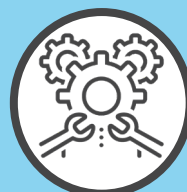
PRE-APPRENTICESHIP SKILLS & COMPETENCIES



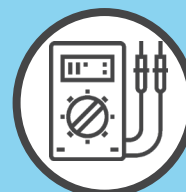
SAFETY



MATH & MEASUREMENT



MANUFACTURING



ELECTRONICS



ROBOTICS



CAREER READY

ROBOTICS TECHNICIAN PRE-APPRENTICESHIP

BotsIQ offers students an opportunity to gain real-world technical skills needed for employment in the advanced manufacturing and robotics industries through its Pennsylvania State Registered Robotics Technician Pre-Apprenticeship. BotsIQ's industry-based classes provide a **strong foundation of knowledge** that is supplemented with **hands-on projects** and **career-related experiences**. Students who successfully complete BotsIQ's Pre-Apprenticeship are eligible for advanced placement in regional apprenticeship programs and receive college credits at local post-secondary institutions. BotsIQ's Robotics Technician Pre-Apprenticeship is endorsed by the Advanced Robotics for Manufacturing (ARM) Institute.



CAREER EXPLORATION & MORE! --

CLOSE THE LOOP

Launched in **2019**, BotsIQ's Close the Loop supports high school students interested in a career in advanced manufacturing or robotics. Through the program, youth have access to valuable career exploration opportunities such as: **facility tours, job shadowing experiences, internships, scholarships, and more**.

POST SECONDARY INTERNSHIPS

In **2020**, BotsIQ expanded its Close the Loop program to provide youth ages 18-22 years old with paid work experience at local manufacturing companies. The BotsIQ Post Secondary Internship Program has three goals: to **enhance students' knowledge of manufacturing career opportunities and expand their professional network**; to **increase their confidence in technical and career readiness skills**; and to **prepare them to successfully earn an industry-recognized credential**.



BotsIQ was a major influence in how I chose to pursue engineering after high school. It not only gave me an outlet to use STEM skills that weren't really used in other classes, but also introduced me to countless engineering skills and concepts that I still apply to my courses today.

- Madison H.

ADDITIONAL RESOURCES:

BotsIQ is focused on the importance of engaging the next generation of manufacturing and STEM leaders through exciting educational programming. In addition to its core programs, BotsIQ provides resources to support educators and students, such as the **BotsIQ Lending Library, summer camps and afterschool programs, teacher professional development, and hands-on training workshops**. New opportunities are always being created -- connect with BotsIQ to learn more!

