

NHS TECHNOLOGY & ENGINEERING DEPARTMENT



Welcome

TECHNOLOGY & ENGINEERING EDUCATION encompasses the processes of critical thinking, analysis, and collaboration in which students integrate concepts in real world contexts of science, technology, engineering, and mathematics (STEM). Through activity, project, and problem-based curriculum, STEM education motivates and engages students to apply what they know, identify problems, design solutions, and lead their own learning. State-of-the-art advanced computer numerical control equipment including Gantry ShopBot routers, Trotec Precision Lasers, Ultimaker 3D Printing technology and MUCH MORE provide industry-leading opportunities for our engineering students.

Technology & Engineering education courses help shape a student's future whether or not they plan to pursue STEM-related study after high school. Highly transferable STEM skills are increasingly recognized as a key driver of opportunity; graduates with practical and relevant STEM teachings embedded into their educational experiences will be in high demand in all job sectors.

[Technology & Engineering Department Welcome Video \(7 min\)](#)



Project Lead the Way (PLTW) Engineering

Affiliated with the Rochester Institute of Technology, PLTW Engineering is a dual enrollment program that applies science, technology, engineering and math (STEM) to solve complex, open-ended problems in a real-world context. Students learn and develop highly transferable STEM skills based on the engineering design process using industry-leading CNC technology and software. Through problems that engage and challenge, PLTW courses explore a broad range of engineering disciplines, including 3D design and modeling, robotics and automation, mechatronics, civil engineering and architecture, digital electronics and circuit design, and computer integrated manufacturing. All PLTW Engineering Courses are eligible to earn 3 college credits by taking an assessment at the end of the course.

[Introduction to Engineering Design](#)
[Civil Engineering & Architecture](#)
[Computer Integrated Manufacturing](#)
[Principles of Engineering](#)

[Digital Electronics](#)
[Robotics*](#)

*fall/spring semester (1/2 credit)

[PLTW Engineering Video \(5 min\)](#)

[Robotics Elective and FIRST Competition Video \(2 min\)](#)



AOIT



Academy of Information Technology (AoIT)

Affiliated with the National Academy Foundation, the Academy of Information Technology introduces high school students to the digital workplace and to the many and highly varied career opportunities it offers in areas including computer science, programming database administration, web design, computer networking, computer security and forensics. An advisory board, comprised of local IT professionals, provides valuable guest speakers and field trip opportunities. A six-week paid internship is required between junior and senior years. AoIT is a four-year program which students begin in their freshmen or sophomore* year. Academy students work together cooperatively and develop real world personal and technical skills that will make them future technology leaders. Students must complete a minimum of four credits and one summer internship while working in collaboration with our IT advisory board.

[Modern Information Technology, Electronics & Coding](#) [Web Page Design](#)

[AP Computer Science Principles](#)
[Introduction to CyberSecurity*](#)

[AP Computer Science A](#)
[SUPA Web Architecture & Development* Video I](#)

*Courses affiliated with SUNY Farmingdale and/or Syracuse University Project Advance are eligible for college credit through dual enrolment

[Academy of Information Technology Video \(5 min\)](#)

NOTE: Any student may challenge one or more AOIT courses without being enrolled in the full program.



Production/Materials Courses

Woodworking Technology courses focus on essential skills, tools, techniques, and safety to successfully enter the world of woodworking and furniture making. Students learn about design, construction, and finishing as well as wood behavior, hand and power tools, milling from the rough, squaring, and joinery. Advanced computer numerical control (CNC) equipment including Gantry ShopBot routers, Trotec Precision Lasers, and Ultimaker 3D Printing technology provide woodworkers with state-of-the-art training.

Woodworking Technology ATS Advanced Woodworking Technology
Furniture Making

[Woodworking and Automotive Courses Video \(3 min\)](#)



Power/Transportation Courses

Automotive Technology courses focus on theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Students develop an understanding of operational principles, service sequences and diagnostic techniques for the automobile as well as for small engines. Instruction includes state-of-the-art diagnostic, machining, welding, and hydraulic test equipment.

Car Care I & II* Transportation Systems
Small Engines* ATS Advanced Car Care III

*fall/spring semester (1/2 credit)

[Woodworking and Automotive Courses Video \(3 min\)](#)



Extracurricular Activities

- Elementary & Middle School Science and Engineering Fair & Expo
- Fall Elementary Family STEM Night
- Spring K-6 STEM Fair
- [Middle School Brookhaven National Labs MagLev Competition](#)
- [Middle School C2C VEX IQ Robotics Competition](#)
- [Science/STEM Olympiads](#)
- AoIT Trade Show
- [AFA CyberPatriot Program Competition](#)
- Advanced STEM Research
- [FIRST Robotics](#)
- Technology & Engineering Honor Society
- [NHS Brookhaven National Labs Bridge Building Contest](#)



Social Media Links



@NptSTEM



Contact Information

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For more information, visit the NEN website (<http://web.northport.k12.ny.us/>) under "Instructional Programs" tab – Technology & Engineering Education