



Outreach

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MINEOLA TO LAUNCH Cybersecurity Curriculum

There are over 1 million unfilled openings in the cybersecurity industry in the United States currently, and that number is projected to grow to 3.5 million in three years.

This September, Mineola will begin offering a new program that will set our learners on a course for success in the burgeoning field of cybersecurity.

This program provides a comprehensive curriculum, teacher training, cyber industry connections and internship integration to prepare students to have an immediate impact on the dynamic cybersecurity landscape.

Graduates will earn industry certification, be prepared for top university cyber programs and have corporate partners competing for their services.

Through a unique public/private partnership, Mineola High School will offer a three-year program consisting of classroom and cloud-based asynchronous courses:

Cyber 1

- Learners acquire foundational knowledge and skills development of cyber mindsets from industry experts.
- Begin hands-on learning through cyber competitions and the use of a “cyber-range.”

Cyber 2

- Development of core skills required for a career in IT security and cybersecurity with the goal of earning the industry-leading Security+ certification.
- Learners will be paired with cyber mentors, experts in the field who will offer real-world experience and opportunities.
- Compete in national cybersecurity competitions to prepare and test themselves against practical cybersecurity challenges that they will likely face in the workforce.

Cyber 3

- Focus on personalized cyber area of focus.
- Expanded mentorship, certification and competition access.
- Internship program for real-world experience.
- Professional resume and skill development.

Student Outcomes

- Our goals for cybersecurity graduates are simple:
 - Workforce ready and ready for recruitment by industry upon graduation.
 - Highly desired for university cybersecurity programs.
 - Cybersecurity certifications (Security+) and college credit.
 - Well-developed soft skills and professionalism.

A learner should consider these courses if they enjoy solving challenges and like working with the latest technology. Whether planning to go to college or join the workforce, the cybersecurity industry offers high starting salaries and opportunities to advance.

We look forward to giving our learners access to a growing field with this new program.

Currently less than 1% of students in America have access to a cybersecurity curriculum.



Cybersecurity is a growing field, and I love how this program focuses on practical applications such as certifications and internships. It's a great addition to our current programming classes.

— Kuri DiFede, Computer Science Teacher



On Jan. 18, Mineola administrators were joined by our technology teachers, as well as representatives from the Digital Promise: League of Innovative Schools Team and community partners for a daylong meeting to discuss the new program. The consortium included professionals in information technology and cyberintelligence with decades of experience, as well as educators and representatives from the public and private sector.

The meeting featured an overview of the planning for the program, as well as a presentation by Digital Promise, a global nonprofit working to expand

opportunity for each learner and advance equitable education systems by bringing together solutions across research, practice and technology.

They were joined by two high school students, Mia Valdizon and Emma Powers, who discussed their computer science experience at MHS, and shared their excitement about the program and how it aligns with their future plans.

The forum concluded with an overview of the Cyber 1 curriculum, a sample unit guide and setting our benchmarks, including developing the core team and advisory board.

Mineola Union Free School District

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Learners Gain STEAM

With Innovative Fab Lab Curriculums



Since its debut in 2017, the Mineola High School Fab Lab (short for Fabrication Laboratory) has set the standard for high-tech, career-focused education in computer design, metal and woodshop technology, while giving a wide breadth for the students to explore their creativity and ideas.

At the high school level, technology teachers Ken Coy, Paul Sommer and Andrew Woolsey are the architects of the program, which starts in eighth grade with Tech 8, a fully immersive, project-based STEAM course that meets every day for a full year.

While the program fulfills the state mandate for technology education, we believe it offers our learners much more, including an introduction to design and project-based thinking as well as an opportunity for career exploration in a multitude of technical and trade fields.

Students in Tech 8 learn the basics of woodworking, metalworking and Arduino, an open-source platform for learning how to program circuit boards and microcontrollers. They get experience with design work using Adobe Illustrator, Aspire and AutoCAD to create art and technical drawings and then see their ideas manufactured using a high-tech laser printer, CNC machine or large-format vinyl sign printer.

Those wanting to take their skills to the next level and check off their fine arts requirement continue with Design and Drawing for Production 1 and 2.

DDP-1 delves into expanded graphic design, more complex woodworking and metal shop, including an introduction to welding.

DDP-2 allows students the freedom to do special projects, including a garden renovation at Hampton

“We give learners the opportunity to have an authentic experience in the Fab Lab. They create, learn and do using all their skills. They get to incorporate history, science, math, arts, business and more while embracing their creativity.”

—Andrew Woolsey,
Technology Teacher

Street, hand building heirloom rocking chairs and the popular Snowman Project, where kindergartners are invited to the Fab Lab to work with the students to create wooden snowmen they can take home.

These courses truly focus on the individuality of each learner, allowing them to develop and refine their skills and make something tangible. They can take an idea that’s in their head and produce it!

An added benefit of the Fab Lab program is the Manufacturing Strand dual-enrollment program with Farmingdale State College available for 10th through 12th graders.

This two-year program provides a more advanced level of training, including technical drawing and 3D design, manufacturing process, CAD drawing, following blueprints and metalworking.

Students who complete the program can earn college credit, as well as certification in entry-level

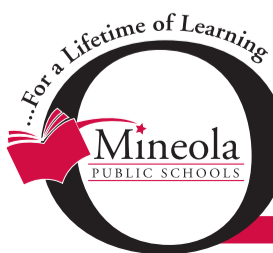
AutoCAD and Autodesk Inventor, industry-standard computer-aided applications for 3D mechanical design. They also receive a 10-hour OSHA certification for manufacturing and construction, paid for by the school.

Sensing the immense value of this unique, project-based Design Learning program, Mineola soon brought the Fab Lab model to the middle school. Beginning in September 2020, under the direction of technology and engineering research teacher Adrianna Guidetti, our fifth and sixth grade learners experience the Fab Lab as part of their weekly schedule. Students learn the basics of 3D modeling, graphic design and manufacturing.

Students are getting hands-on experience with advanced, yet kid-friendly equipment including Cricut Maker, a digital die-cutting machine; a dye sublimation printer for printing on coffee mugs, ornaments, water bottles and other items; and a CNC machine that allows the students to turn their creative ideas into physical items they can be proud to bring home, like wooden and metal signs.

The middle school Fab Lab is giving our learners a head start with graphic design and engineering process skills, as well as problem-solving and critical thinking techniques that will ensure they are prepared for high school and postsecondary education and career opportunities.

We are proud to be innovators in the area of design thinking with our middle and high school Fab Lab programs and look forward to remaining on the cutting edge of engineering technology education as we help each of our students explore, plan, construct and create their futures.



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