

STEMPIRE

The Danbury Public Schools STEM Spotlight



Engineering Classes Expand

Teacher Implements Project Lead the Way

In an effort to expand STEM offerings at Danbury High School, the beginnings of an engineering pathway are being developed.

This summer, Justin Morgan, a technology educator at Danbury High School, attended a two-week training for Project Lead the Way (PLTW). This intensive program, held at Worcester Polytechnic Institute in Worcester, Massachusetts, provides educators with everything they need to be successful in implementing an engineering program.

“Each day was nine hours of class with two or three hours of homework per night,” Morgan said of the experience.

Although intense, Morgan found the training to be incredibly enlightening. During the day, he would learn the curriculum and have an opportunity to engage with the kinds of projects students would be expected to complete in his classroom. Much of the work involved more than what one would typically think of when considering engineering.



STUDENTS IN MR. MORGAN'S CLASS COMPETE TO BUILD THE TALLEST STRUCTURE ON TOP OF A SPHERE



STUDENTS GATHER AT BELIMO IN DANBURY TO SEE ENGINEERING FIRST HAND

They need collaboration, communication, and grit.

“They use an APB approach - activities, problems, projects,” said Morgan. “One of the first activities is brainstorming, a skill that isn’t content driven, but is necessary.”

Morgan went on to describe the kinds of skills that engineering can instill in students that will help them to be college and career ready. For instance, in his current entertainment technologies course, Morgan’s students design and build a set piece for a play.

“The problem is open-ended. They need collaboration, communication, and grit. They need to really analyze how they got it wrong and go through the engineering,” Morgan said, describing the typical process that leads up to a design that succeeds.

The ability to persevere through unexpected design outcomes is key to success not only in set design, but in engineering as a whole. These skills, along with core concepts of math and science, help to make the curriculum of PLTW engaging and transferable.

Right now, Morgan has 20 students enrolled in the first PLTW class: Introduction to Engineering Design. Some students are new to engineering and some students have had experience through programs such as the STEM Academy at West Side Middle School. The flexibility of the curriculum allows the program to be successful with a range of students.

We want these classes to lead to internships, jobs, and other opportunities.

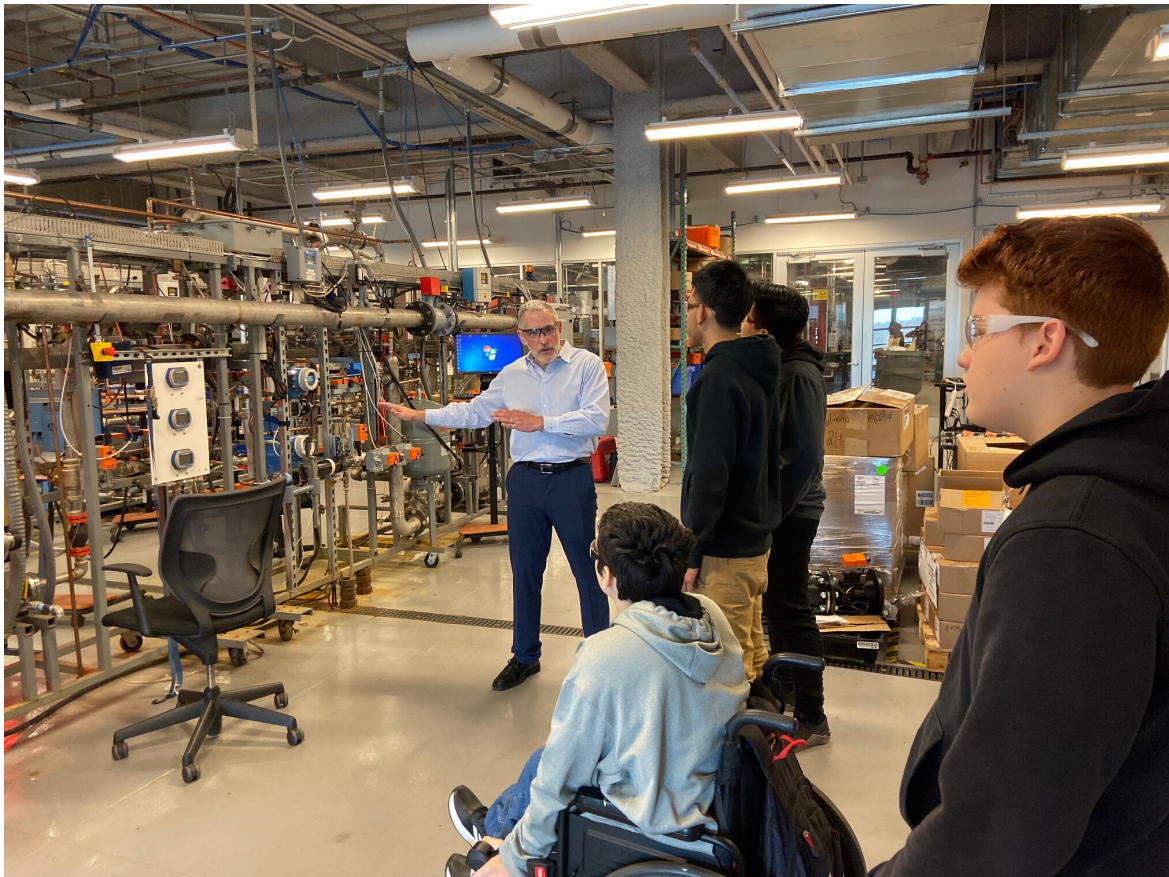
This curriculum joins other engineering-minded courses such as Honors Robotics and Architectural Design. Morgan is excited to be adding PLTW to the offerings at DHS.

He is particularly looking forward to continuing to build partnerships with local companies such as Belimo and Collins Aerospace, “so that our students can see what’s out there,” said Morgan.

Over the course of the next few months, Morgan plans to hold tech talks during Flex periods to inform students about the importance of a technical education. He is also hoping that the tech talks will shine a light on the engineering programs offered at the school.

Moving forward, the PLTW curriculum offers increasingly advanced classes.

“Next year we will have the next course, Principles of Engineering. Eventually, we want these classes to lead to internships, jobs, and other opportunities,” said Morgan.



STUDENTS EXPLORE ENGINEERING-IN-ACTION AT BELIMO