### Preble High School

Customer Success Story

Autodesk<sup>®</sup> Design Academy AutoCAD<sup>®</sup> AutoCAD<sup>®</sup> Architecture Autodesk<sup>®</sup> Inventor<sup>™</sup> Professional Autodesk<sup>®</sup> VIZ Revit<sup>®</sup> Architecture

Making sure students learn relevant skills is the reason we chose Autodesk. By having students learn on Autodesk products, I know they will have the skills that employers are looking for.

Jeremie Meyer, Instructor
Preble High School
Green Bay, Wisconsin

# Rev it up

Preble High School helps to inspire future engineers and architects with Autodesk software.



Kitchen by Kenny Rovinski

### Leading the Way in STEM Education

The Green Bay School District's Preble High School, with about 2,300 students, offers a specialized curriculum dedicated to preparing students for careers in architecture, engineering, and manufacturing. Instructors Jeremie Meyer (mechanical engineering and manufacturing) and Ryan Freude (civil engineering, architecture, and architectural drafting) have found that pupils' success rates soar with exposure to software and curricula that are project-based.

For this reason, both instructors use software and a curriculum from Autodesk that are based on science, technology, engineering, and math (STEM) concepts. In addition, Preble High School is a participant in Project Lead the Way (PLTW), a national program that teaches applied engineering in middle and high schools. All Preble courses taught by Meyer and Freude are PLTW-certified.

### The Challenge

Meyer says that many parents and students believe that traditional academic classes in math and science are sufficient to prepare students to study engineering at the college or university level. Meyer and his fellow Preble instructors hope to change that perception by taking an exciting, interactive approach to teaching engineering and design concepts.

Starting in 2000, Meyer and Freude used 2D mechanical design and building information modeling (BIM) software from Autodesk to help students discover and appreciate the value of math and science by applying their knowledge to exciting design projects and competitions.

Meyer says, "Students have been systematically trained from an early age to visualize in 3D by the computer games and graphics they have grown up with. Many instructors still think you have to draw orthographic projections by hand or by 2D CAD." As 3D design becomes more prevalent in the fields of architecture and engineering, Meyer believes educators need to teach these tools so that students are prepared for the next generation of design.

### Autodesk<sup>®</sup>

## Autodesk Design Academy helps students develop the skills they need to compete for the jobs of tomorrow.

#### **The Solution**

To prepare students for the future of design, the Green Bay Area School District implemented the Autodesk<sup>®</sup> Design Academy program, which includes Autodesk<sup>®</sup> Inventor™ software for mechanical design and Revit<sup>®</sup> Architecture software for building information modeling, as well as curriculum tools and lesson plans for applied STEM skills instruction.

Meyer's introduction to engineering design teaches students basic design concepts. Students begin using Autodesk Inventor software as early as the first week of class, when they are asked to form teams to design and build a puzzle cube and then present their work to the class. Meyer's more advanced students use Inventor to design and build supermileage, electrathon, and experimental robotic vehicles, which they then race in regional and national competitions.

"The sooner I get students working on Inventor, the sooner they are hooked on engineering in general," says Meyer. "In fact, I have seniors tell me all the time they wish they would have taken Intro to Engineering as freshmen so they could have had more time designing and building their vehicles."

Meanwhile, Freude teaches his students AutoCAD<sup>®</sup>, AutoCAD<sup>®</sup> Architecture, and Autodesk<sup>®</sup> VIZ software programs, providing them with the fundamentals of design through the visualization and rendering of residential and commercial buildings. Freude's students recently put their skills to practical use to provide a local engineering firm with professional renderings of a medical facility. The students used Revit Architecture software to simulate what the building would look like upon completion. "I am constantly amazed at what my students are able to accomplish after only a few weeks' training on Autodesk software," says Freude. "As a practicing structural CAD designer, I know what it takes to make it in the field, and the skills my students learn at Preble will serve them well throughout their academic and professional careers."

#### **The Result**

Meyer and Freude's students graduate with a passion for engineering and a competitive edge on future college and university coursework. "Most of my students who have gone on to college or the field have expressed how easy their design classes were at the postsecondary level after taking classes at Preble," says Meyer.

In addition to furthering their academic success, Preble students have also gone on to land internships and jobs at engineering and manufacturing companies around the nation, including Boeing, Hamilton Sundstrom, John Deere, Greenheck, and Hayes Brakes, to name just a few.

To learn more about Autodesk's academic solutions and programs, including Autodesk Design Academy and Autodesk® Animation Academy, visit www.autodesk.com/education. Visit the Autodesk Student Engineering and Design Community at www.autodesk.com/school.

To learn more about Project Lead the Way, visit **www.pltw.org**.

To learn more about Preble High School, visit www.greenbay.k12.wi.us/preble



Minichopper by Renco



Image by Ken Rovinski and Jon Steinhorst



Last year, one of our seniors working at a local engineering company was asked to train the engineers at the firm on Inventor! He simultaneously placed second in the ExtremeRedesign competition held by Stratasys Inc.

–Jeremie Meyer, Instructor Preble High School Green Bay, Wisconsin

Interior by Greg Hendricks

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