

RIT Engineering Student Raves About 3D Printing

"Our Dimension 3D Printer is a workhorse. You have an idea and an hour later, you're holding the part in your hand. It's easy enough that any student can use it."

— Kyle Manchester, Junior, Rochester Institute of Technology

For Kyle Manchester, engineering has been a passion since his first design courses in high school. He made exceptional grades throughout his rigorous college preparatory coursework and was rewarded by admission to Rochester Institute of Technology (RIT), named by U.S. News and World Report among the world's leading career-oriented, technological institutions.

Hands-on Learning with Dimension 3D Printing

During his Statics Lab in his second year at RIT last fall, Manchester learned how to calculate forces in bridges, trusses and beams. The final project challenged teams to build a scale truss out of any non-metallic material. The team whose mini-truss design could hold the most weight would win.

Materials chosen to build the bridge ranged from bamboo, to vinyl siding from a house, to Popsicle sticks, to balsa wood. "The wooden bridge held a dozen or so bricks, then splinters went flying," says Manchester.

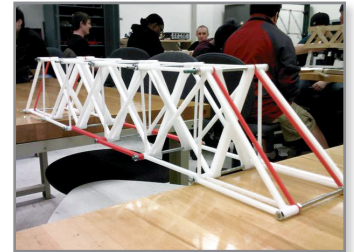
Given his work in the Laboratory for Product Innovation and Commercialization at RIT, Manchester was familiar with one of the lab's most popular tools – the Dimension 3D Printer. He suggested his group elect to make their mini-truss of ABS plastic using the 3D printing technology. "I drew the bridge up in CAD design software, then printed out the individual pieces using the Dimension 3D Printer and assembled it," Manchester says.

While making the calculations, his group decided to print the parts in the printer according to the load they'd bear. The parts under the most stress were very thick, with the other parts varied in thickness. "Our bridge was by far the most successful. After holding all the bricks in the room – more than 40 – our truss held three of my group members, the heaviest of which was 190 pounds," says Manchester. "With the truss weighing 1.3 pounds, that's 146.15 times its own weight without buckling!"

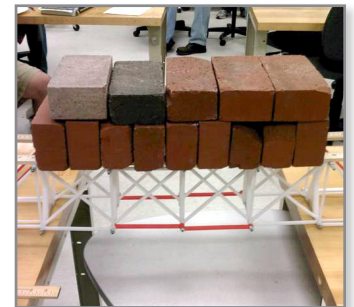
Dimension 3D Printing Serves Multiple Users

Manchester says 3D printing technology is essential and widely used at RIT. "Our Dimension 3D Printer is our workhorse. It runs nearly all day long; it just goes, and goes, and goes," says Manchester. "It's great to have; you have an idea and need a part made. An hour later, you're holding the part in your hand. It's easy enough that any student can use it."

Beyond application in his Statics course, Manchester sees 3D printing capabilities supporting cross-disciplinary needs at RIT, from math professors to art students. "Dimension makes strong, solid parts, which is essential for producing any prototype, whether it's for a fine arts student, a math teacher or our student-run Baja racing team."



For a class project, Kyle Manchester and his team build a winning mini-truss out of ABS plastic using their Dimension 3D Printer.



This 1.3 pound mini-truss printed from a Dimension 3D Printer holds 40 bricks.

For more information about Dimension 3D Printers, call **888.480.3548** or visit www.dimensionprinting.com

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