Oregon State University

Customer Success Story

Autodesk Infrastructure Solutions
Autodesk® Civil 3D®
Autodesk® Map® 3D
AutoCAD®

"With a software package such as Autodesk Civil 3D, they feel like they are doing relevant, real-world work. And, when they enter the job market, they have a great advantage over other job candidates – they have a complete toolbox and a portfolio of real-world projects. They're what we call 'work-ready.'"

Tracy Arras
Instructor and Lower Division Coordinator
College of Engineering
Oregon State University

Oregon State University: Designing Students' Futures

Autodesk® civil engineering and geospatial software gives OSU students the tools to compete and succeed.

Project Summary

Located in the middle of Oregon's finest recreational and scenic areas, Oregon State University (OSU) in Corvallis was recently ranked by The Princeton Review as one of the best universities on the west coast. OSU boasts more than 19,000 students, with more than 750 students in undergraduate programs in Civil, Construction, and Environmental Engineering alone – making its College of Engineering among the nation's largest engineering program in terms of undergraduate enrollment. OSU turned to Autodesk® software to arm its students with the tools to compete and succeed in the civil engineering industry.

The OSU College of Engineering uses Autodesk's civil engineering and geospatial software to

- Give students applicable real-world experiences
- Design based on current city specifications
- Enable underclassmen to work on "real" engineering projects
- Reduce the civil engineering labor shortage
- Give students a competitive advantage in the job market

The Challenge

Tracy Arras, OSU Civil Engineering Instructor and Lower Division Coordinator, became an instructor after owning and managing her own business. Her experience in industry has helped her to recognize the value of teaching students with tools that the industry really uses.

With the need for highly trained civil engineers with superior technology skills growing, Arras is doing her part to reduce the labor shortage. "Autodesk-trained graduates will be better prepared to handle real-world challenges and can hit the ground running after graduation," says Arras. "We want to ensure our students have the tools to compete and succeed in their engineering careers."

The Solution

As the Lower Division Coordinator, Arras wanted to incorporate industry-specific skills and knowledge early in OSU's civil engineering curriculum. Once again, she turned to Autodesk software – this time to prepare her students for the real world.

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"Autodesk's free Education Curriculum is comprehensive and very easy to follow. It parallels the workflows of real-life projects, preparing my students for their lives after graduation."

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Arras took advantage of Autodesk's civil engineering educational downloads and incorporated the software into required lower-level engineering courses. "Autodesk's free Education Curriculum is comprehensive and very easy to follow. It parallels the workflows of real-life projects, which prepares my students for their lives after graduation," explains Arras. She teaches a combination of Autodesk® Civil 3D®, Autodesk® Map® 3D, and AutoCAD® to give her students a well-rounded view of Autodesk technology.

Real-World Projects Yield Real-World Experience

Not only do OSU students benefit from working with software used in the civil engineering industry, they also work on real-world assignments and projects that give them an edge in the job market after graduation. "Students work in teams to design and develop a subdivision using data sets from Autodesk's Education Curriculum," explains Arras. "They must develop their own subdivision based on the City of Corvallis' specifications. They gain experience working with city requirements such as right-of-way or minimal parcel size. And at the end of the class they have a great design to add to their portfolio."

In Arras' course, students learn to create alignments, surfaces, parcels, and profiles, and perform earthwork for their subdivision designs and other projects. Students learn automated mapping skills that introduce them to the big picture of civil engineering. These skills are directly connected to upper division courses where they will focus on specific engineering disciplines such as transportation or highway design. OSU seniors take a Capstone Design class and will have worked with the software for three years – and will be ready to hit the job market running.

Reducing Freshman Frustration

"Underclassmen want to use real software for real engineering work. Many times our freshmen and sophomores don't have the background to work on 'real' engineering projects and get frustrated with small-scale projects that aren't applicable to the real world," says Arras. "With a software package such as Autodesk Civil 3D, they feel like they are doing relevant, real-world work. And, when they enter the job market, they have a great advantage over other job candidates – they have a complete toolbox and a portfolio of real-world projects. They're what we call 'work-ready.'"

The Result

Arras is already seeing the benefits of arming her students with real-world civil engineering experience. Many of her students have won internships as a direct result of their experience with the software. "Once students have Autodesk civil engineering software on their resume, their foot is in the door," says Arras.

In addition to creating more projects, Arras is also working to integrate GIS and geomatic technologies such as remote sensing, image processing, and GPS into OSU engineering projects. "There is tremendous value in integrating Autodesk Map 3D with Autodesk Civil 3D," Arras says. "It will allow our civil engineering students to leverage rich geospatial information to make better design decisions."

For More Information

To learn more about how Autodesk supports academic achievement and lifelong learning, visit **www.autodesk.com/education**. To learn more about Autodesk Infrastructure Solutions, visit **www.autodesk.com/infrastructure**.

To learn more about Oregon State University's College of Engineering, visit: **www.engr.oregonstate.edu**.

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