

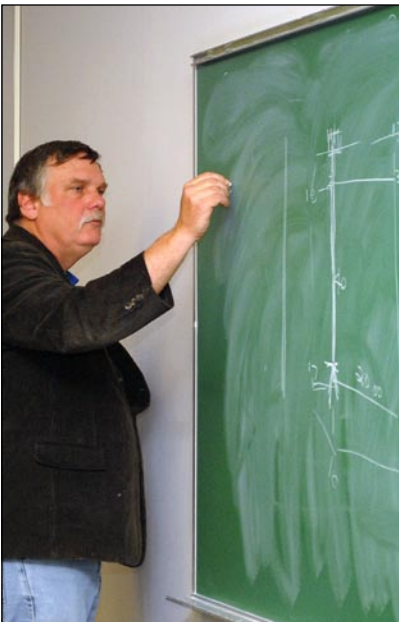
AT WORK

 TOPCON

Survey
Summer 2011



Topcon helps move students from theory to reality



Alan Chace, assistant professor.

By the fall 2010 semester, the Center for Mathematics, Engineering, Physical Sciences, and Applied Technology at Mohawk Valley Community College (MVCC), Utica, N.Y., needed new surveying total stations for courses that include surveying instruction. Alan Chace, assistant professor, notes that the center had been using the same total stations for more than 10 years.

Colleges and universities, none of which have infinite financial resources today, depend greatly upon grants that augment their instructional resources. The center has benefited from financial assistance in a slightly different form since 2005: discounts through Topcon Positioning Systems' Educational Partners Program. The program, which normally is implemented through Topcon's dealer network, provides financial support and training for educational institutions. More than 300 educational institutions in the United States are involved in the program.

In 2005, MVCC purchased a Topcon HiPer Lite + base station and rover antenna, which students use to learn the intricacies of real-time kinetic (RTK) Global Navigation Satellite System (GNSS) technology. Prior to the start of the fall

Company: Mohawk Valley Community College

Location: Utica, N.Y.

Project: Surveying in construction, engineering and surveying classes

Location: Utica, N.Y.

Topcon Products:

GPT-3105W,
HiPer Lite + base station and
rover antenna

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'It's more user-friendly than the older units. You definitely don't have to use a log book anymore—you can just plot as many points and take as many readings as you want.'

– Dritan Taganovic, building management/surveying student



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Students watch as Chace (center) demonstrates the total station's wireless capabilities.

2010 semester, MVCC made its second purchase under the Topcon assistance program and acquired four GPT-3105W total stations. Chace said that surveying labs typically serve 12 students (four crews of three each) so four total stations were needed. In addition to the savings, MVCC has received several visits from Topcon representatives who have trained both instructors and students on the new units.

The displays on the new units allow more functions, according to student Amel Bacic of Utica, who is primarily focusing on civil engineering as well as surveying. As of early November 2010, Bacic and other students were using the total stations conventionally, i.e., in conjunction with a prism deployed separately, and were working on using their "reflectorless" capability. In reflectorless operation, the total station sends high-energy pulses that reflect light back to the station from an otherwise non-reflective object. "Topcons are reflectorless, so you don't always have to go out with prisms to get your distances, which is great," says Bacic. "They can also save a whole lot of time on the job."

The total stations and GNSS receivers allow the students to complete hands-on tasks that accompany the theory behind surveying. "What we do, essentially, is teach them the theory, the mathematics, the legal issues, the work in the classroom and then we have a series of lab experiences that are designed to reinforce that," says Chace. "We talk in the classroom, for example, about how to read blueprints and then we come up with stakeout notes for those blueprints and then we go out in the field, outside of the classroom on the college campus and execute those building stakeouts."

Using the GNSS receivers in tandem with the total stations will give the students more real-life training, according to Chace. Early in the semester, he said, students used the receivers to locate underground structures on campus so that some new solar-powered signs would not disturb the structures. The data were imported into CAD and the structures were mapped and, later, staked. "This is an example of a real-life lab/theory application that we try to train people on," says Chace, adding that the GNSS receivers made locating the structures a very efficient process. "What we did was nothing that could not have been done with a transit and steel tape, but we were able to get this technology into the hands of my students and put it to work very much like they would in the work force."



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Topcon's GPT-3000W Series

Wireless technology on the total stations with the longest reflectorless range in their class.



With its revolutionary 1200m reflectorless range the 3000LW sets a new standard for EDM range, delivering the power for difficult shots that others just can't measure up to! The Topcon 3000LW series measures nearly four times farther than any other competitive total station.