

New Course at University of Arizona Revolves Around Real World Project – Granite Construction Benefits

Students immediately apply what they learn in class to gain hands-on experience.

MGE and the Arizona branch of Granite Construction Co. are collaborating on new project-oriented courses for undergraduates. Granite provides the project, associated data and some oversight of the student's activities. A faculty member directs the students' day-to-day activities in which the students learn theory in class and then immediately apply it to the Granite project.

During the spring 2003 semester, for instance, students designed and implemented a sales record database that used predictive algorithms to create sales forecasts. In the fall 2003 semester, they designed several materials-handling designs and conducted cost analysis of several materials-handling options. These options could guide future expansion of the company.

Currently, the department is offering three courses that involve industry participation, all taught by MGE Assistant Professor Sean Dessureault. They are:

Equipment Operations Technology (materials-handling design and optimization.)

Management Operations Technology (database, accounting and operations management, the first two courses focus on civil, mining, and engineering management engineers.)

Rock Excavation (mechanical excavation, drilling and blasting, focused on civil, mining, and geological engineers)

The courses were developed in response to the changing needs of today's students and industry. Industry and accreditation groups are encouraging engineering programs to offer more hands-on design courses, while the university is capping the number of credit hours needed to earn a degree. In addition, engineering students are being asked to take more humanities courses. As a result, teaching must become more concentrated if the same amount of material is to be covered in less time.

Meanwhile, funding for small engineering departments has continued to decline, while industries such as copper, gold, and coal mining, which have traditionally supported mining engineering programs, have less money to contribute because of mergers and shrinking profit margins.

In addition, faculty cannot be experts in all fields, and experts from industry can bridge this gap by providing the missing expertise. This is particularly true in hardrock mining, since faculty often tend to conduct their research in more traditional areas of mining.

Faculty, students and the company all are benefiting from the new courses. The company benefits because it gains additional help in solving problems and technical expertise. It also is able to assess student abilities over a long-term project as it searches for employees. For more information contact Sean Dessureault at (520) 621-2359 or sdessure@email.arizona.edu.