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## **Corporate partnership teaches industry standard to S&T students**

ROLLA, Mo. –In a unique industry partnership, 36 undergraduate petroleum engineering students are learning about their discipline from representatives of an oilfield service and technology company.

Missouri S&T offers Petroleum Engineering 323 Artificial Lift every fall semester to undergraduate students majoring in petroleum engineering, but this is the first time the course has been taught by industry representatives. The course is being taught by Weatherford, an oil and gas firm that specializes in artificial lift. It is designed to teach students various methods of removing oil from the well bore.

“We typically teach a few methods of artificial lift, but Weatherford is teaching all different forms,” says Dr. Shari Dunn-Norman, associate professor of petroleum engineering at Missouri S&T. “This partnership with Weatherford is truly elevating Missouri S&T’s existing course to industry standards.”

Dunn-Norman, who usually teaches PE 323 at Missouri S&T, is on sabbatical this semester. Her leave prompted the partnership with Weatherford. She worked with company representatives to tailor their course materials to meet the requirements of a university setting.

Once this pilot course is completed, Weatherford will package the course materials and offer them to other universities with petroleum engineering programs. Dunn-Norman plans to use them in her fall 2014 Artificial Lift course.

“Education of our future workforce and our future clients is very important to us,” says Dr. Rajan Chokshi, director of training and business development in the artificial lift and production optimization division at Weatherford and one of the course instructors. “Our desire was to transfer knowledge of artificial lift, particularly in its application, to universities.

“When we started looking around at different curriculums, we found that very few universities teach courses dedicated to artificial lift,” Chokshi says. “Missouri S&T is an exception, in my opinion.” The course is taught by four Weatherford staff members. Each instructor spends some time on campus, but most classes are taught remotely. It allows the instructors to teach the S&T course without disrupting their regular work schedules, which frequently involve international travel.

All courses are recorded and posted online through the Missouri S&T Video Communications Center. Although not offered as a distance course at this time, the online format allows on-campus students with scheduling conflicts to remain in the course. The course covers gas lift, plunger lift, reciprocating rod pumps, deliquification, capillary injection, electrical submersible pumps, hydraulic jet and hydraulic piston pumps and progressive cavity pumps. Weatherford is also teaching production optimization, which will show students how to select, operate and optimize an artificial lift system throughout its entire life cycle to maximize oil field production while minimizing costs in a given range of circumstances.

“We are trying to bring together the best talent in several topics,” says Chokshi. “These are specialists who are very passionate about their subjects.”

In addition to Chokshi, the course is taught by Bill Lane, vice president of emerging technologies; Darryl Albers, technical specialist and artificial lift design engineer; and Roman Molotkov, technical marketing and sales manager of production systems. Chatetha Chumkratoke, a Ph.D. candidate at Missouri S&T, serves as a teaching assistant for

the course. Michelle Kennedy, a global training coordinator at Weatherford, assists with the training side of the course and posts all of the coursework to Blackboard to be accessed by the students.

“The Society of Petroleum Engineers is working diligently to encourage industry to partner and work with universities,” Dunn-Norman says. “Our program is a model for other companies to partner and share course materials.”

## **About Weatherford**

Weatherford is a Swiss-based, multinational oilfield service company. It is one of the largest global providers of technology and services for the oil and gas industry. Weatherford operates in more than 100 countries and employs more than 65,000 people worldwide.

## **About Missouri University of Science and Technology**

Founded in 1870 as the University of Missouri School of Mines and Metallurgy, Missouri University of Science and Technology (Missouri S&T) is a technological research university of more than 8,000 students and part of the four-campus University of Missouri System. Located in Rolla, Mo., Missouri S&T offers bachelor's, master's and Ph.D. degrees in 55 disciplines, including engineering, the sciences, business and information technology, the humanities, and the liberal arts. For more information about Missouri S&T, visit [www.mst.edu](http://www.mst.edu).

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