FOCUS: Distance Learning

Engineers Find Flexibility in Online Master's Programs

By Jane Byrne
Staff Writer

Two years ago, Professional Engineer Tim Przybylowski decided to go back to school to earn a Master's degree in engineering. Already the senior vice president of Benetech Associates, a Pennsylvania consulting firm, he was constantly busy with career responsibilities so he decided to look into distance learning.

After much research, Przybylowski decided to enroll in the Master's of Engineering in Professional Practice program at the University of Wisconsin at Madison. The 10-course degree program allowed him to earn his graduate degree in two years by working on his courses when it was convenient for his schedule. Although Przybylowski lives and works in Pennsylvania and his college was located in Wisconsin, he says "never felt distant."

Distance education offers an opportunity for engineers immersed in careers, family commitments, and other responsibilities to continue their education from home or the office. In the past, distance education had been criticized for being cold, hands-off, and detached. However, many universities around the country are building online programs that offer quality engineering degree programs.

For instance, the MEPP program at UW-Madison uses a teleconferencing system and a Web conferencing tool to create an interactive environment for its online courses. The technology felt transparent, Przybylowski says, so it was easy to learn with out that becoming a distraction. Daily discussions about assignments take place online or through a toll-free telephone number to encourage interaction between classmates.

The program uses a cohort model in which a group of about 30 engineers take every course together. Students even work on group projects collectively. "I felt a collaborative environment both with my cohort and with the faculty and staff," Przybylowski says. "During the class sessions, students' participation is tracked so that everyone must take part."

The MEPP program is geared specifically toward engineers in mid-career. Wayne Pfeilert, the program director, describes it as an engineering leadership program. In fact, the students complete projects that are integrated into their real-life projects at work. "It encourages dialogue with people in their own company," Pfeilert says. It also helps build communication and decision-making skills that can make them better leaders.

Stanford University also accommodates students in industry by providing online Master's degrees in electrical engineering, management science and engineering, and mechanical engineering. According to Andy DiPaolo, executive director of the Stanford Center for Professional Development, about 150 students earn graduate degrees in engineering each year through the online program, representing 15% of engineering Master's degree recipients at the school.

"Students in industry didn't have time to do live classes," DiPaolo says, so the university moved to asynchronous education. Students in the online graduate programs are held to the same standards as the students on campus, he adds.

It generally takes three to four years for students to earn the online graduate degree at Stanford. Przybylowski says. The program offers busy students convenience and flexibility and allows them to take courses in other engineering disciplines. DiPaolo says.

At the University of Delaware, students can earn graduate degrees in electrical and mechanical engineering from a distance, whether they are working engineers or recent graduates. The courses can be completed remotely, although they are not all online. The program uses CD-ROM, fax, video, e-mail, and Web streaming, says Kathleen Werrell, director of the university's Engineering Outreach program.

The distance Master's in engineering program at UD has been available for only two years, although the Engineering Outreach program has offered various distance courses since 1994. So far, the program has had only one graduate earn the degree solely through distance courses, Werrell says. However, she expects that number to grow.

Another college that is building an online degree program in engineering is Johns Hopkins University. According to Brenda Knox, the senior engineering technology specialist at Johns Hopkins, students in online degree courses tend to be 25-35 years old and are usually working engineers. Knox says that many of the online engineering students are from government agencies and may work in far-off locations or they travel a lot for work and find the distance-learning courses convenient.

"The courses help them keep up even though they're not here," Knox says. The courses are communication intensive and asynchronous. Private and public e-mail discussion areas are provided and faculty can respond to the public communication. In addition, faculty members hold office hours, which are recorded for later viewing by students who were unable to attend.

In addition, streaming guest lectures are recorded for later viewing by students in different time zones who missed the live lectures. Students who do attend live lectures can later take part in question and answer sessions.

The distance program began in the spring of 2001 and offers 10-15 online courses per semester. "Most of them fill," she says, adding that the university is receiving requests for more online courses.

The program at Johns Hopkins is accredited by Middle States Commission on Higher Education, according to Knox. She says that some people may think online education is less rigorous or comprehensive, but if students are motivated, they will receive a rigorous education in the program. It connects with what they're doing in their real lives, she adds.

Tim Przybylowski felt connected with the MEPP program at UW-Madison. "You could make it as applicable as you needed to in the workplace. The quality of student there was phenomenal," he adds. His fellow students were of all ages, ranging from 24 to 54, and each student had a different experience set and perspective to share.

Przybylowski also says he felt a bond with the school while he was in the graduate program. "You definitely feel like you're a student at the university," he says. "We all became Badgers for two years." In fact, he is still in communication with many of the graduates of the 2004 class of the MEPP program.

Overall, Przybylowski enjoyed his experience in the program and says he would recommend it to any engineer interested in earning a Master's degree online. "It helps rejuvenate your love of engineering."