Nebraska College Offers Intense NDE Program

As they spread across the country upon graduation, students also spread the word about Southeast Community College's Nondestructive Testing program

BY MARY RUTH JOHNSEN

A concentrated curriculum with a large number of hours devoted to basic and advanced nondestructive examination methods; well-equipped, modern laboratories; and close ties with the NDE industry are the hallmarks of the Nondestructive Testing Technology program at Southeast Community College (SCC), Milford, Neb.

Milford, located about 20 miles west of Lincoln, Neb., is one of Southeast Community College's three campuses and follows a 10-week quarter system rather than a three-semester system. Classes are held from 8:00 a.m. to 4:00 p.m. Monday through Friday. Students in the NDT program earn an Associate of Applied Science degree.

The program began in 1979 as an outgrowth of the school's Welding and Metallurgy program. That first year, one instructor taught the program's six students, who took four quarters of welding and two quarters of NDE instruction in five basic processes: magnetic particle testing (MT), dye penetrant testing (PT), ultrasonic testing (UT); radiographic testing (RT), and eddy current testing (ET). Current Instructor Bill Wiley, a member of that first class, said only about a year later the program had expanded to the current six-quarter offering. In 1980, the school also started a student chapter of ASNT. "The chapter is completely student run," explained Instructor and Chapter Advisor Angela Phillips. "It really helps build leadership skills."

These days, each new class includes 15 to 18 students. Because of the pace and difficulty of the curriculum, Wiley said, the program experiences a 25 attrition rate. Ten students graduated in December 2003.

Currently, three instructors teach both basic and advanced classes. Program Chair Randy Walbridge and Wiley are AWS Certified Welding Inspectors and hold ASNT Level III certifications in MT, PT, RT, and UT. Wiley is also an AWS Certified Welding Educator. Phillips holds ASNT Level II certifications in those same methods and is working toward Level III. In addition, all three instructors have earned ASNT Industrial Radiography and Radiation Safety Personnel (IRRSP) certification. All of the program's classes exceed the formal classroom training requirements of ASNT SNT-TC-1A for Level II instruction. Unlike traditional college classes in which attendance is not mandatory, the NDT program does its best to mimic actual job practices, so a strict attendance policy exists. Poor attendance can adversely affect a student's grade. Wiley explained the program's industry advisory committee has emphasized the need for graduates who display a good work ethic and understand the need to show up every day and on time.

Brian Neemann setting up isotope radiography equipment to inspect a piping weld on the college's heating boiler gas manifold system.

Chuck Misel inspects a large-diameter piping elbow utilizing an ultrasonic digital thickness gauge.

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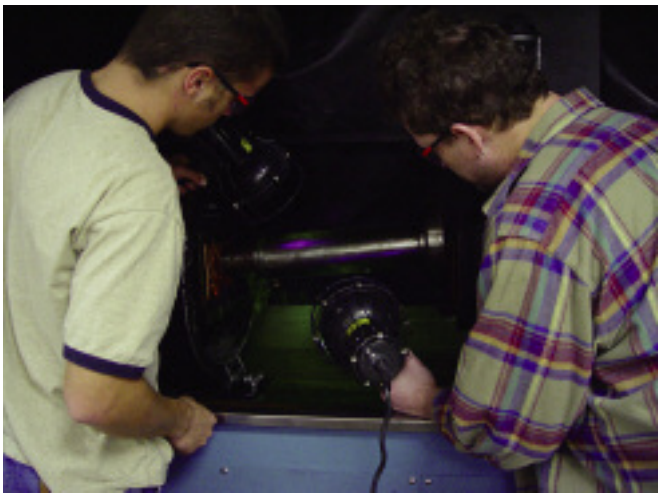


Kyle Woodward and Bud Zaloudek inspecting a machined roller bearing shaft using a wet fluorescent magnetic particle unit.

Currently, the Nondestructive Testing program is housed in a 12,000-sq-ft complex that contains more than $1 million in laboratory equipment. Facilities include the following:

- A large ultrasonics testing laboratory containing a state-of-the-art immersion data acquisition system
- Four dedicated radiography exposure rooms and two darkrooms with manual and automatic processing capabilities
- An eddy current lab
- A liquid penetrant and magnetic particle lab
- A metallurgy laboratory containing hardness testing machines, tensile testing machines, and micrographic capabilities
- A computer lab.

Getting Started

Most students learn about the program by word of mouth. Ciji Nelson served as vice president of the school's ASNT Student Chapter prior to graduating in December as one of the top students in her class. She became interested in the program after job shadowing a cousin who had graduated from SCC and become an inspector in the aircraft industry. After following her cousin around for a day, "it looked interesting and I decided to check it out," she explained.

Tony DeLong, a December graduate and president of the ASNT Student Chapter, was working full time and taking night classes at another community college when someone told him

Jason Lorenz positioning a composite panel for inspection with the computerized ultrasonic immersion system. (Photo by Aaron Clark.)

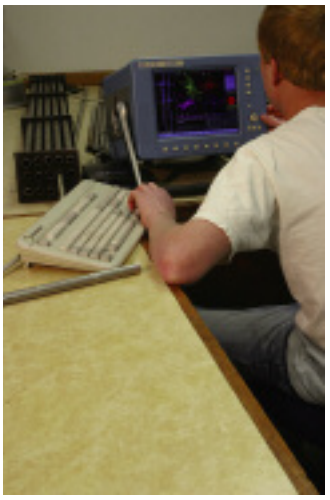
Breakdown of Laboratory and Classroom Training Hours

Method	Classroom Training (hours)	Laboratory (hours)
Ultrasonic Testing	105	225
Radiographic Testing[a]	160	205
Eddy Current Testing	110	100
Visual Testing	40	40
Penetrant Testing	35	45
Magnetic Particle Testing	45	45

(a) Radiography laboratory hours are comprised of 135 hours of X-ray experience and 90 hours of gamma-ray experience.

For More Information

Information regarding Southeast Community College's Milford Campus Nondestructive Testing Technology program, admissions, financial aid, and student activities is available from the school's Web site at *www.southeast.edu* or by contacting the Milford Campus Admissions office at 600 State St., Milford, NE 68405-8498; telephone (402) 761-8243 or (800) 933-7223.



Justin James inspecting a heat exchanger mock-up with multi-frequency eddy current equipment. (Photo by Aaron Clark.)

Andy Poole performing film interpretation and evaluation of a weldment. (Photo by Aaron Clark.)

Javier Leon performing ultrasonic angle beam inspection on a pipe weld to the ASME Code. (Photo by Aaron Clark.)

Molly Sturh preparing to radiograph piping welds on the college's heating boiler gas manifold system. (Photo by Aaron Clark.)

Today, more students are being hired to work at independent testing and research labs than by manufacturers.

about the SCC program. After talking to Bill Wiley, he switched to Southeast Community College. Brian Neemann, a fifth quarter student, originally was considering attending an airframe and power plant school. That school also had an NDE program and although he didn't plan to enroll in it, that's how he learned about the SCC program. "I took the (campus) tour and talked to the teachers," DeLong said. "It sounded interesting and tuition was much lower than the $30,000 a year the other school cost."

An Intense Program

Wiley believes one thing that makes the SCC program special is the number of hours dedicated to the various NDE methods. During their six quarters at the school, the students take 35 credit hours of general education courses and 110 NDE credit hours. Those NDE credits break down to 825 lecture hours and 875 laboratory hours. "We are one of the highest in the United States with regard to the number of hours devoted to each NDE method," Wiley said (see boxed item).

Eric Yindrick, who graduated from the program in December, said the program is "set up well. The workload is heavy but understandable." The fast pace of the program "teaches you to be a harder worker," he said.

Neemann agreed. The program turned out to be "more technically intense" than he thought it would be. "It's a challenge, but a good one," Neemann said.

The breakdown of the NDE curriculum is as follows:

First and Second Quarters. The seven courses that make up the first two quarters include Visual Inspection, Introduction to Manufacturing Processes, Introduction to Welding, Blueprint Reading and Computer-Aided Design, Electrical and Electronic Fundamentals, Introduction to NDT Methods, and Introduction to Metallurgy.

Third Quarter. Ultrasonics I and the Liquid Penetrant Method.

Fourth Quarter. Eddy Current I, Magnetic Particle, Radiography I, and Radiation Safety and Administration.

Fifth and Sixth Quarters. Radiography II & Film Interpretation, Eddy Current II, Ultrasonics II, Computer Applications in NDT, and Code Interpretation & Procedure Development.

After Graduation

Nearly all of the students live within a 20-mile radius of Milford. Yet, since the program's inception, a limited number of NDE jobs in Nebraska has meant most students must relocate. The job placement rate is nearly 100%. Usually the only students who do not take jobs in the NDE industry are those who decide to continue their education and go on for a bachelor's degree, Wiley said.

Although the number of jobs in some industries, such as aircraft/aerospace and petrochemical, has declined in recent years, placing students has not been difficult thus far. "There is a great concern that the NDE work force is aging," Wiley said, "and that there will be a shortage."

Today, more students are being hired to work at independent testing and research labs than by manufacturers, Wiley said. Keeping close ties to industry by working closely with the program's industry advisory committee and attending industry events such as the ASNT Fall Conference and Quality Show helps considerably when it comes time to place students, Wiley explained. *Inspection Trends* interviewed students during the 2003 Quality Show in Pittsburgh, Pa., where they were manning the school's booth and networking with exhibitors and attendees in hopes of meeting potential employers.

Attendees at the AWS Nondestructive Testing Conference in Orlando, Fla., this past December, said the school has a strong reputation within the industry and is one of the "go to" places for new hires.

The average starting salary for the nine students who graduated in December 2003 and who decided to take jobs within the NDE industry is $37,500. "Not bad salaries for an 18-month degree," enthused Wiley. ❖