

Surveying Engineering Technology

(Associate Degree)



PROFESSION

Career opportunities in today's surveying and construction environment have never been more exciting or more challenging. An associate degree in surveying engineering prepares you to become a certified surveying technician — one of the fastest growing occupational groups in the United States.

The increased application of science and engineering has intensified the demand not only for surveyors and engineers, but also for the technicians who assist them. Engineering technicians are employed in virtually every field where technical know-how is required.

Their work requires the application of scientific and mathematical theory as well as specialized knowledge and technological skills. They are given a variety of responsibilities in the preparation and calculation of the preliminary and legal surveys that are required for subdivision work, individual lots, highway layouts, sewer systems, construction layouts and more.

According to the Bureau of Labor Statistics, surveying technicians assist licensed land surveyors by operating survey instruments and equipment, and collecting information in the field. Once in the office, they perform computations and computer-aided drafting.

They also may work in a survey party, which gathers information needed by a land surveyor. A typical survey party consists of a chief, who oversees the work, and one or two technicians, the bureau reports.

Technicians assist the survey party chief by operating surveying instruments, such as a theodolite, and electronic distance-measuring equipment. They hold the vertical rods or targets that the theodite operator sights on to measure angles, distances or elevations, according to the bureau. If electronic distance-measuring equipment is not used, the technician holds the measuring tape.

FOR MORE INFORMATION, VISIT THESE WEB SITES:

Summit College: <http://www.uakron.edu/colleges/summit/>

The University of Akron: <http://www.uakron.edu>

Office of Admissions: <http://www.uakron.edu/admissions>

In addition to these responsibilities, the surveying technician compiles notes, makes sketches and enters data obtained during the survey into the computers. With a national technical certificate, a survey technician may become a survey party chief.

The occupation requires active, and sometimes strenuous work, the federal government says. Technicians often stand for long periods of time and walk considerable distances, usually while carrying heavy packs of instruments and other equipment. Because they work outside, they also are exposed to all types of weather.

OPPORTUNITIES/SALARY

About 63 percent of surveyors, cartographers, photogrammetrists and surveying technicians are employed by engineering and architectural services firms, according to the federal government. Federal, state and local governments employ an additional 16 percent, and the remainder work primarily for construction firms, mining, and oil and gas extraction companies, as well as public utilities companies.

The bureau predicts job opportunities will grow at an average rate during the upcoming years. Prospects should be best for surveying technicians as a short training period and a current lack of formal testing and licensing make for a healthy demand for these professionals.

The median salary for surveying technicians was \$30,380, according to the most recently published data (2004).

DEGREE PROGRAM

An associate degree in surveying engineering technology prepares you for immediate employment as a surveying technician and teaches you skills that will help you adapt to forthcoming technical changes. Our graduates enjoy careers with public and private companies as well as in all areas of local, state and federal government.

During the first year of the program, you will receive a solid background in the fundamentals — mathematics, physics, technical drawing and communications. The second year builds on this background with an in-depth study of surveying concepts and principles. You will learn how to use a variety of tools.

The comprehensive curriculum includes classroom and laboratory experiences, which allow you to apply your knowledge in surveying engineering and help you develop critical thinking skills.

While you'll gain a thorough grasp of surveying engineering technology principles and concepts, you'll also have plenty of opportunities to roll up your sleeves and test your knowledge with laboratory projects. The surveying and mapping technology program maintains two computerized laboratories — one for map generation and GIS/GPS activities, and one for surveying instrumentation studies and practices.

As a graduate of the surveying engineering technology program, you have the option of continuing your education by pursuing the bachelor of science degree in surveying and mapping technology through a "Step Up" program. The credits earned for your associate

degree transfer to the four-year program; you simply take the last two years of the bachelor's degree program, and one co-op year. Many of our students pursue the bachelor's degree part time as they continue to work in the field.

This program is accredited by the Technology Accreditation Commission of the Accreditation Board of Engineering and Technology.

AKRON ADVANTAGE

Your education is not confined to the classroom. The University of Akron offers vast opportunities for you to apply your skills and knowledge and enhance your classroom studies. You are encouraged to gain important practical professional experience through an internship or the University's cooperative education program.

Participation gives you firsthand, professional experience in the surveying and mapping field of your choice. In addition, it improves your employment opportunities and potential salary upon graduation.

Through co-op, you'll alternate semesters of work and school. As an added benefit, you'll earn a competitive salary. An internship allows you to learn about the career as a professional by working five to 10 hours a week. You will earn academic credit for participation.

You also can earn academic credit through an independent study project under the advisement of a faculty member.

Classroom instruction also is enhanced through student activities. Participation in such organizations provides valuable experience and the chance to meet other students and professionals.

HIGH SCHOOL PREPARATION

To prepare for the surveying engineering technology program at The University of Akron, you are encouraged to take as much math and science as your high school offers. English and language arts classes are also important, as clear, concise writing and communication skills are imperative in any field. If you have not completed the recommended courses, you may be required to take University courses to meet the basic criteria.

THE UNIVERSITY OF AKRON

You may already know that The University of Akron is the public research university for Northern Ohio. But we're much more than labs and lasers.

Our 24,700 students choose from

approximately 300 academic programs and areas of study, from accounting to zoology. Many of our undergraduate programs have gained national recognition, including psychology, sales and marketing, dance, global business and gerontological nursing.

About 7,000 students live in our 12 residence halls or just a short walk from campus. When they aren't hitting the books, thousands take advantage of the University's fraternities, sororities and more than 200 student organizations, from gospel choir and alpine skiing to career-building professional and academic societies. We also offer 17 intramural sports and clubs, from bowling to cardio kickboxing.

The University's ongoing, major campus renovation campaign that began in 2000, the "New Landscape for Learning," has added 11 new structures, including two classroom buildings, as well as 30 acres of green space and numerous additions. This transformation continues today — UA's first on-campus football stadium is scheduled to be completed in time for the Zips' 2009

home opener.

Here's more of what you'll find at the new UA:

- Student Recreation and Wellness Center, a massive structure with ball courts, fitness facilities, rock climbing wall and a recreational pool that includes a 19-seat spa, "lazy river" and fountain.
- Student Union, containing a movie theatre, billiards/bowling room, food court, Starbucks, bookstore and headquarters for student organizations.
- Honors Complex with combination residence hall and academic facilities.
- Gardens, lawns, amphitheatre and tree-lined pathways.

You'll also discover a campus retooled for your academic success. We are Ohio's most wired-for-wireless public university, and can provide you reduced-rate, high-speed Internet access off campus.

ADMISSION INFORMATION

The Office of Admissions
330-972-7100 or 800-655-4884
<mailto:admissions@uakron.edu>
<http://www.uakron.edu/admissions/>

Job statistics and information provided by the Bureau of Labor Statistics.

Sample Curriculum

Associate of Applied Science Degree in Surveying Engineering Technology

First year		Second year	
Fall Semester:		Fall Semester:	
English Composition I	4	Technical Report Writing	3
Technical Mathematics II, III	4	Technical Calculus	3
Software App for Technologists, Lab	1	Construction Surveying, Lab	3
Surveying Drafting	3	Fundamentals of Map Production	3
Intro to Geomatics, Lab	3	Boundary Surveying, Lab	3
Basic Surveying I, Lab	2	Total	15
Total	17	Spring Semester:	
Spring Semester:		Technical Physics: Elect. & Mag., Lab	
Technical Mathematics IV	3	or	
Tech Physics: Mechanics I, II, Lab	4	Technical Physics: Heat & Light	3
Computer-Aided Drawing I	3	Survey of Basic Economics	3
Basic Surveying II, Lab	2	Intro to Geo & Land Info Systems	3
Computer App in Surveying	3	Advanced Surveying, Lab	3
Introduction to Public Speaking		Surveying elective	2
or Effective Oral Communications	3	Introduction to Geography	3
Total	18	Total	17
Summer:			
Surveying Field Practice	2		
Total	2		