

Educating the Surveyor
The Online Degree at the University of Maine
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Introduction: In 2018, the University of Maine gave the Surveying Engineering Technology (SVT) program permission to offer an online degree in surveying in conjunction with the resident surveying program. The enrollment in the undergraduate (live and online) SVT program has jumped from approximately 40 students to over 120 students in two years. The majority of the students in the surveying program are enrolled in the online surveying program.

Five years ago, the surveying program was in danger of being eliminated and is now recruiting a full-time faculty to help with the high student numbers. The online program is a success story.

The program provides degree opportunities and eventually licensing opportunities to those who are not able to attend a brick and mortar school. Those individuals able to attend full-time state or regional surveying program are encouraged to do so. Without question that avenue for surveying education is the fastest method of obtaining a degree and often provides networking opportunities that last a lifetime. However, for those individuals with families, conflicting employment, or enrolled as full-time students in a community college, taking surveying courses online is the only realistic way to obtain a surveying degree.

Program Background: Before explaining the online degree, some background about the surveying program is appropriate. Surveying education at the University of Maine occurs in the Surveying Engineering Technology program. The program is one of four programs within the School of Engineering Technology. The School of Engineering Technology is part of the College of Engineering.

Accreditation: The Surveying Engineering Technology program is an ETAC/ABET accredited program. ABET establishes standards for engineering and surveying programs nationwide. Successful completion of the online SVT program results in an ETAC/ABET accredited bachelor of science degree in surveying engineering technology.

Graduate Qualifications: Graduates of the program meet the minimum education qualifications for surveyor licensure nationwide. Graduates also meet the minimum educational qualifications for licensure as a professional engineer in Maine and several other states.

Faculty: Faculty within the Surveying Engineering Technology program must possess at least a master's degree in surveying or related field, have at least three years of practical experience, and must be licensed as a surveyor. Currently, all faculty within the program have a Ph.D. and are licensed as surveyors in at least two states. Two of the faculty are also licensed as professional engineers. One is also licensed as an attorney at law.

Online Courses & Requirements: The online surveying curriculum can be viewed at <https://online.umaine.edu/wp-content/uploads/sites/72/2018/05/online-curr-fall18.pdf>. All the courses required for the degree are available online. Students are encouraged to take math, English, speech, accounting, business management, and other non-surveying courses at their local community college or from online courses available at other universities.

Online courses that require hands-on experience such as plane surveying, construction surveying, and practical GPS do require experience under the guidance of a mentor to replace labs that students would ordinarily take in residence. The SVT faculty are very happy with how the surveying profession has been so helpful in the mentor process.

Transfer Credits: Most students use transfer credits from other institutions to meet the surveying degree requirements. Almost half the students have transferred 80 credit hours or more into the online surveying program (125 credits are required for graduation). Transfer credits for courses required for the surveying degree are usually given with little impediment if the credits were obtained from reputable institutions). At least 30 credits must be taken from the University of Maine to obtain a degree from the University of Maine. University of Maine online courses are acceptable for achieving the 30 credit graduation threshold.

Most students transfer credits in mathematics, physics, English, speech, accounting, business management, humanities, and social science that they have previously obtained and need only take the surveying courses to obtain a degree. A few students will have a two year degree in surveying and will take only a few surveying courses and complete the 30 credit University of Maine threshold degree requirement by taking other online courses from the University of Maine.

Online Surveying Courses: Technology and software have allowed faculty to record lectures, integrate audio and visual stimulations, and animate the visual display. Faculty are able to produce informative videos on a variety of topics.

At the University of Maine, most online surveying courses require a student watch or listen to videos focused on a designated topic area that comprise a portion of a course. An example of a presentation in the boundary law course can be viewed at <https://youtu.be/OAyuIwIuGg0> Testing on the video content occurs periodically. Assignments must be completed weekly. Interactive sessions with students occur weekly at pre-arranged days and times using conferencing software. At these sessions students can see and ask the instructor questions about the video, topic for the week, assignments, or test questions. E-mail is also used for timely communications between the instructor and student.

Student Profile: Individuals currently enrolled in the online program come from over 24 different states. The average age of the student is 37 years of age. The background of students in the online program varies from recent 18 year old high school graduates to individuals already licensed as surveyors. The latter individuals want to obtain an ABET accredited degree so they can pursue licensure in states that require a four year surveying degree.

There are many individuals enrolled in the online program that already have degrees and wish to change their careers or expand their career options. In one case, a licensed engineer has a goal to obtain a surveying license to couple with their engineering license. In a few cases, individuals are graduates of two-year surveying programs that already have considerable surveying course work and will take other courses available online at the University of Maine in order to obtain a four-year degree.

Tuition: Tuition is reasonable. Current tuition cost for online courses can be found at <https://online.umaine.edu/svt/> Note if accepted into an online degree program at the University of Maine out of state students pay E tuition (instate tuition *1.25) which is a very large savings over out of state tuition. Military veterans, regardless of their state of residence, pay in-state tuition rates at the University of Maine.

Resident versus Online Learning: The traditional classroom is superior to the online courses for some students, especially the 18-22 year old student. In the traditional classroom, the on-site contact between the student and instructor provides immediate visual and verbal interaction and feedback. Oftentimes, for the 18-22 year old student, the compulsory attendance in a scheduled class is a necessary requirement in order to create an effective learning environment, especially for a young immature student.

Other Programs: While this article has focused on the University of Maine, other surveying programs have online components. An individual should check with their state and regional surveying programs to determine if these programs have online components.

Online Graduate Degrees: The University of Maine also offers a Professional Science Masters (PSM) in Engineering and Business Surveying Engineering option and a Graduate Certificate in Surveying Engineering. Twenty-one students are currently in the PSM program and seven students are in the six month old graduate certificate. See <https://online.umaine.edu/surveying/>

Additional Information: For additional information about the online surveying program, course substitutions, transfer credits, or curriculum questions, contact Dr. Ray Hintz, P.L.S. at Raymond.Hintz@maine.edu. Generic questions about online U Maine program and admissions should be directed to Dagmar Moravec dagmar.moravec@maine.edu. Statistics for this article were provided by Ms. Kasey Hagedorn who is a graduate assistant for the Division of Long Learning at UMaine Online and a M.Ed student at the University of Maine.