

Return on Investment A Formal Surveying Education

By

Knud E. Hermansen†
P.L.S., P.E., Ph.D., Esq.

Carlton A. Brown†
P.L.S., P.E., Ph.D.

As faculty members in the Surveying Engineering Technology program at the University of Maine, we are often asked if it is worth pursuing a bachelor of science degree in surveying. In other words, will a graduate receive a good return on their investment by pursuing academic studies in surveying. Our answer is an unqualified "YES."

THE RETURN FROM THE INVESTMENT

The return from investing in a four-year surveying education has many facets aside from the knowledge itself and the need for the degree in some states for obtaining a professional license. From our observation, graduates from a four-year surveying program are in the top 30% of the starting salaries received by college undergraduates. This surprises many surveyors who often feel they are on the bottom end of earners.¹ The fact is that a large number of college graduates cannot find employment after graduation.² What employment is available for many college graduates is not too far above the minimum wage.³ Some graduates such as those with a degree in social work must often obtain a graduate degree or work as an unpaid intern for one or two years before securing paid employment in their field. On the other hand, over thirty employment announcements were posted for University of Maine surveying students between January and May 2013⁴ - almost three times more than the number of surveying students graduating.

A four-year surveying degree has considerable value aside from surveyor licensing. Graduates with a bachelor of science degree in surveying are in an excellent position to multiply their earnings through additional studies. Graduates can go on to earn a graduate degree in the surveying field or a related field such as GIS. Graduates can

¹ The average salary of a surveyor in 2012 was \$59,180 a year or approximately \$28.50 an hour while an elementary teacher was \$56,000 per year, a social worker was \$47,000 per year, forester was \$57,000 per year, and electrical engineering technician was \$58,000 per year. "May 2012 National Occupational Employment and Wage Estimates United States" *Bureau of Labor Statistics*. Retrieved May 2013 from http://www.bls.gov/oes/current/oes_nat.htm#17-0000

² See Willis, Gerri. (2013 Feb.) "Drowning in Debt: Liberal Arts Graduates" *Fox Business, Gerri Willis Daily*. Retrieved May 2013 from <http://www.foxbusiness.com/on-air/willis-report/blog/2013/02/19/drowning-debt-liberal-arts-graduates> and Gerber, Scott. (2012 Sep.) "How Liberal Arts Colleges Are Failing America." *The Atlantic*. Retrieved May 2013 from <http://www.theatlantic.com/business/archive/2012/09/how-liberal-arts-colleges-are-failing-america/262711/>

³ Notte, Jason. (2013 April) "284,000 College Grads Making Minimum Wage" *MSN Money*, Retrieved May 2013 from <http://money.msn.com/now/post.aspx?post=60c2d77c-2d2b-4920-8156-4fb05e443d93>

⁴ The employment outlook for surveyors is 25% higher than average. (August 2012) "Surveyors", *Bureau of Labor Statistics*. Retrieved May 2013 from <http://www.bls.gov/ooh/architecture-and-engineering/surveyors.htm>

also pursue graduate studies and earn an MBA,⁵ graduate degree in civil engineering,⁶ or a law degree.⁷

Most four-year surveying programs are ABET accredited. Graduates with a bachelor of science degree in surveying from an ABET accredited program can seek dual registration as both a surveyor and engineer in most states.⁸ Dual licensing as both an engineer and surveyor will add at least 50% to an individual's average salary.⁹ Many surveyors also hold other licenses or certifications allowing practice and expanded services in such areas as designing on-site septic systems, forestry, wetlands delineation, flood plain manager, photogrammetry, and city planning, to name a few.

Surveying graduates also have considerable potential to increase their earnings by hard work and entrepreneurial endeavors. Unlike some professions such as grade-school teaching or social work where individuals most often work within a structured bureaucracy, surveyors usually obtain employment where they can advance based on merit and hard work. Licensed surveyors can start their own firms with minimal investment in equipment and software compared to other startup businesses.

The bottom line is that a graduate with a four-year degree can expect to earn around \$600,000 more during their professional career.¹⁰

THE COST

The second part of analyzing the return on an investment in formal education as a surveyor is to look at the cost of a formal education. Without question, education is expensive. A four-year degree at a public university will cost around \$90,000.¹¹ There are numerous ways to reduce or even eliminate this cost.

One way to drastically reduce costs, available to every student, is to earn a surveying degree at a two-year college.¹² At the University of Maine, a 2+2 option is available for almost all two-year (associate in science) surveying degrees. Even where a two-

⁵ It is a misconception to believe an individual must have an undergraduate business degree before earning a masters in business administration (MBA).

⁶ Most civil engineer programs will allow an individual with a B.S. in surveying to enroll directly into the civil engineering graduate program.

⁷ Generally the only two requirements to be accepted into a law school is an acceptable undergraduate grade point average (GPA) and an acceptable law school aptitude test (LSAT) score. All things being equal, nurses and technical majors are often given preference.

⁸ NCEES administers both components of the surveying and engineering exams. Individuals seeking licensure as a professional engineer will have to work under a licensed engineer performing engineering services before the individual can sit for the principles and practice portion of the engineering exam.

⁹ According to the NSPE 2012 Engineering Income and Salary Survey, a dual licensed individual mean salary is \$104,000 a year.

¹⁰ "2013 College Education ROI Rankings: Does a Degree Always Pay Off?" *PayScale*. Retrieved May 2013 from <http://www.payscale.com/college-education-value-2013>

¹¹ "2013 College Education ROI Rankings: Does a Degree Always Pay Off?" *PayScale*. Retrieved May 2013 from <http://www.payscale.com/college-education-value-2013>

¹² In Maine, community colleges tuition rates are approximately a third of the tuition rates at four-year Universities.

year surveying degree is not available in a state, a frugal student can earn approximately two years of credit toward a four-year surveying degree at most community colleges. General education courses required for a surveying degree such as mathematics, physics, writing, speech, accounting, economics, business law, ethics, and humanities courses are usually found and can be taken at community colleges found near most communities.

Full tuition payment through scholarships or other avenues are often available to students. The most common source for payment of all tuition costs in the surveying program at the University of Maine is veterans' tuition assistance like the G.I. Bill. Almost 7% of the current students in the surveying program at the University of Maine are veterans receiving veterans' educational benefits.¹³

A major source of scholarship grants come from state surveying societies. Many state surveying societies award student scholarships in excess of several thousand dollars a year. Almost all surveying students at the University of Maine receive one or more surveying scholarships.

Another major source of education financial support is summer employment in the surveying field. Summer often brings an increase in surveying field work with a corresponding increase in part-time surveying employment. Some employers even provide scholarships to summer employees going to college.¹⁴

THE RESULTS

After examining both the investment cost and return on the investment, the result shows a four-year degree in surveying is a good investment. The college graduate can expect to earn 65% more than a high-school graduate.¹⁵ Based on a 30-year professional career, a graduate can expect a 7% return on their investment.¹⁶ Of course the return on the investment is considerably higher with community college courses, tuition aid grants, and scholarships.

For almost all individuals, pursuing a four-year surveying degree is worth the effort.¹⁷

† Knud Hermansen and Carlton Brown are professors in the Surveying Engineering Technology program at the University of Maine. The Surveying Engineering Technology program is a four-year program leading to a B.S. degree in Surveying Engineering Technology. It is an ABET/TAC accredited program. A five year B.S./M.B.A. option is available. The focus of the program is to educate students for professional surveying practice.

¹³ As an aside, without an explanation, almost all at this time are U.S. Marine veterans.

¹⁴ The Bureau of Land Management fell into this category along with many private employers such as Judith Nitsch Engineering, Inc.

¹⁵ Korane, Kenneth J. (2012, Sep.) "Which Engineering Schools Offer the Best Value?" *Machine Design*. Retrieved May 2013 from <http://machinedesign.com/news/which-engineering-schools-offer-best-value>

¹⁶ "2013 College Education ROI Rankings: Does a Degree Always Pay Off?". *PayScale*. Retrieved May 2013 from <http://www.payscale.com/college-education-value-2013>

¹⁷ Ibid.