

# Removing Barriers to Surveying Education: A Cooperative Agreement in Surveying Education Between Cambrian College and Michigan Technological University

By Jerry D. Taylor, J.D., P.S. — Coordinator, Surveying Program, School of Technology, Michigan Technological University

In May of 2004, Cambrian College of Applied Arts and Technology and Michigan Technological University entered into a cooperative agreement to provide graduates of Cambrian's three-year Civil Engineering Technologist diploma program with a clearly articulated path to Michigan Tech's B. S. in Surveying degree.

While agreements such as this (often called articulation agreements) are common between institutions of higher learning, this agreement is unusual in two respects.

One obviously unusual aspect of this agreement is that it crosses international boundaries. Agreements between institutions from different countries do exist, but the cultural and legal differences create additional obstacles for the two institutions that must be dealt with.

The other unusual aspect of this agreement is that it is between a technology program and a professional program. This agreement was entered into with the hope of providing technology students with easier access to a professional career.

## What the agreement hopes to provide for students and for the surveying profession.

In much of the United States, and presumably, in much of Canada as well, there is a shortage of professional surveyors. Unless recent trends change, that shortage is likely to grow. Hence, attracting young people into the profession is becoming an increas-

ingly high priority of surveying societies in the U.S. As a program whose mission includes the advancement of the surveying profession, we at Michigan Tech strive not only to increase the quality of surveying education, but we also seek to increase the number of people who are exposed to that education.

Consequently, we pride ourselves in reaching out to make a professional level education in surveying available to populations that are experiencing obstacles of one sort or another.

One population that we have reached out to is the population of place-bound students. These are students who find it difficult to "go away" to obtain a surveying education. Such students are typically older, and often have extensive work experience in surveying or in related disciplines. They typically cannot leave to attend school because of extensive financial

or family commitments. We at Michigan Tech seek to bring a quality surveying education to such students via our distance learning degree program, which is the first distance learning degree program in surveying to be accredited by the American Board for Engineering and Technology (ABET). Most of the students who have enrolled in our distance-learning program already hold a baccalaureate degree in a different field or are seeking to obtain their first degree.

Another group of potential students that we are reaching out to are those who have received a degree in a technical field of study and who want to move into the study of surveying at the professional level. The agreement between Cambrian College and Michigan Tech is designed to meet the needs of this group.

Young people make their initial career and educational decisions at a





The agreement between Cambrian College and Michigan Tech gives those who hold the three year Civil Engineering Technologist diploma from Cambrian a clear and straightforward means of obtaining a B.S. in Surveying degree. By enrolling in the Civil Engineering Technologist program at Cambrian, a student can defer the decision as to whether they want to pursue surveying at the technical level or at the professional level. They can enroll at Cambrian right now, knowing what more will be required of them should they want to continue on and receive the B.S. in Surveying degree.

### How the agreement works

Any student who is enrolled in a diploma program at Cambrian can transfer their coursework to Michigan Tech. The request to transfer should be made from 6 to 12 months in advance. Transfer will be granted if the student has a grade point average at Cambrian of 2.5 or greater on a 4.0 scale. Michigan Tech will grant credit for all courses completed at Cambrian with a grade of "C" or better, assuming that Michigan Tech offers a similar course. None of this is unique to Cambrian.

What is unique about this agreement is that it blends Cambrian's three year diploma in Civil Engineering Technology into Michigan Tech's B.S. in Surveying. Those who obtained this diploma with a grade point average of 2.5 or more can obtain the B.S. in Surveying by taking an additional 64 semester credits from Michigan Tech. The agreement is structured in such a way that the student will not have to repeat any courses at Michigan Tech (although some topics are likely to be repeated). The agreement gives the student full credit for all work at Cambrian that is incorporated into Michigan Tech's B.S. in Surveying degree. The only work that will have to be taken at Michigan Tech will be in areas that weren't covered at all at Cambrian, or that need to be covered in more depth at Michigan Tech.

When the blended program is reviewed as a whole the true nature of

the agreement can be seen. Instruction in English, basic math, engineering technology, drafting, and basic surveying technologies is provided by Cambrian. Instruction in physics, advanced math, general educational studies, and advanced surveying topics (including boundaries, legal issues, geodesy, survey adjustments, ethics, etc...) is provided by Michigan Tech.

### What's next?

This agreement is new and untested. While we are pleased as to what has been accomplished to date, we realize that more needs to be done to build upon this agreement.

One purpose of the agreement is to provide more options for graduates of Cambrian's diploma programs in technical fields. Since this agreement helps ease the entry of those who hold Cambrian's Civil Engineering Technologist diploma into a baccalaureate program, it provides at least one more option. Naturally, if the agreement with Michigan Tech was expanded to include more programs, both at Cambrian and at Michigan Tech, this would provide still more options than exist today. Similar agreements between Cambrian and other institutions would carry the same benefit, so it is likely that other agreements will be sought by both institutions, both with one another, as well as with other institutions.

Since Michigan Tech's B.S. in Surveying program is ABET accredited, and since it is one of only two degree programs that the State of Michigan has pre-approved as meeting their educational requirements for licensure, this agreement provides an avenue for Cambrian graduates to cross the international boundary and practice surveying in Michigan. But how about in Ontario?

We do not have an authoritative answer to that as yet. We believe that Michigan Tech's B.S. in Surveying degree meets the educational requirements set forth by the AOLS. However, to the best of our knowledge, the degree has not yet been evaluated

difficult time of their lives. Many people have the information to know exactly what career they want and the resources and confidence to pursue it. This group comprises the traditional university freshman class. Unfortunately, the number of such people who know enough about surveying at this stage of their lives is quite small. Smaller than is needed to grow the ranks of professional surveyors to the level that will best meet the needs of society.

Some young people may feel that an education in a technology program related to surveying is more suitable for them. Many such people complete their program of study and then enter into a career that fulfills them. However, at the completion of their studies, some technology graduates may want to pursue surveying at the professional level. Others may not develop a desire to seek a career at the professional level of surveying until they have spent some time in the work force. Regardless of the reason, we believe that there are people holding a degree or diploma in a technical field related to surveying who would like to be able to obtain a professional level education in surveying without the need to start over from the beginning.

by the AOLS or the regulatory authorities of any other Canadian province either.

At <http://www.aols.org/db/news-info.asp?it=10>, the AOLS states that, "Membership in the Association of Ontario Land Surveyors requires a degree in Geomatics from an accredited university program for example Ryerson or York University in Toronto or the University of New Brunswick, or equivalent." Michigan Tech's B.S. in Surveying degree is accredited by the ASAC commission of ABET. That may be sufficient. On the other hand, since the legal and boundary courses in this program are taught by persons who are not licensed to practice surveying or law in any Canadian province, it is reasonable to expect that the AOLS or their accrediting agencies will want to make an independent examination of this degree before approving it. We are in uncharted territory here, so while we don't know exactly what will be required to gain the necessary approval, we know that the next step is to start doing whatever

needs to be done to obtain that approval.

At this time, the agreement envisions that interested students will need to take the last 64 credits of classes at the Michigan Tech campus. That may change however. Since the B.S. in Surveying degree is made available in several U.S. states via distance learning, we have the technical capability of delivering it to students at the Cambrian College campus. This is one of several possibilities worth exploring over the next few years as we seek ways to make this agreement yield all the benefits that it is capable of.

### Conclusion

Several months ago, Cambrian College in Sudbury, Ontario and Michigan Technological University in Houghton, Michigan entered into a cooperative agreement leading to the B.S. in Surveying degree. While the agreement is new and untested, Michigan Tech's B.S. in Surveying degree has been offered for over 20 years and has been accredited by ABET since 1986.

The agreement should provide a new option for holders of Cambrian's Civil Engineering Technologist diploma to smoothly transition their studies to the university level. It should also provide them with a unique avenue to surveying licensure in the United States, especially in Michigan. All of this is complete as of now.

Other potential benefits, such as gaining formal approval from the AOLS and expanding the agreement to deliver classes to Cambrian via distance learning are still being worked on. So, while the agreement is in place, we expect to continue working to make it more valuable. Stay tuned.



Those who would like to learn more about this agreement are invited to contact John Hood, Dean of Computer and Engineering Technology at Cambrian College via email at:

[jxhood@cambrianc.on.ca](mailto:jxhood@cambrianc.on.ca)  
or Jerry Taylor, Surveying Program Coordinator at Michigan Tech via email at:

[jdtaylor@mtu.edu](mailto:jdtaylor@mtu.edu)

# LSR

**"WE'VE GOT PLANS"**

## LAND SURVEY RECORDS INC.

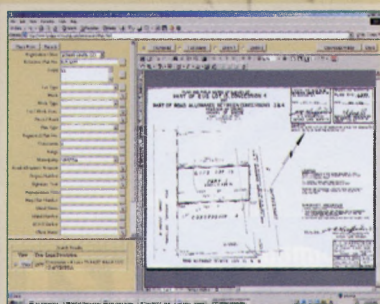
[www.landsurveyrecords.com](http://www.landsurveyrecords.com)

Do you get paid when your plans are copied?

Would you like to be?

Would you like to...

- have access to search, view and print plans from any internet connection?
- have access to surveys from other member surveyors?
- search geo-coded images?
- be paid every time someone accesses any of your plans whether they are deposited, registered, or private.



**1-888-809-5513**

[info@landsurveyrecords.com](mailto:info@landsurveyrecords.com)

Visit our booth at the AGM

**LSR is a province wide, online database of deposited, registered, and private surveys; for surveyors, created by surveyors.**