

**Proposal 2-08
(Voting Units: Academic)**

Certificate in Global Technological Leadership

Office of the Provost

Introduction

This proposal recommends establishing a ‘Certificate in Global Technological Leadership’ through the Office of the Provost. This program is multidisciplinary and was developed through collaboration among the College of Engineering, College of Sciences and Arts, School of Business and Economics, School of Forest Resources and Environmental Science, and the School of Technology. This program is submitted through the Office of the Provost but will be administered through the Institute for Interdisciplinary Studies (IIS). IIS is a newly established Institute and the mission of the Institute is to create, grow, and nurture interdisciplinary educational programs, research, and scholarship that transcend school/college lines. It will provide a resource base to support these interdisciplinary activities that promote an innovative, creative, and active, discovery-based learning environment. The vision is to contribute to Michigan Tech being recognized as a leader in creating new knowledge and in developing outstanding programs at the intersection of existing and emerging disciplines. A website is being developed for the Institute for Interdisciplinary Studies (IIS). At this time a website exists for the Pavlis Institute for Global Technological Leadership www.pavlisinstitute.mtu.edu and for the Enterprise Program www.enterprise.mtu.edu which are programs administered by the IIS.

I. Title of Certificate

Certificate in Global Technological Leadership

II. Catalog Description

The Certificate in Global Technological Leadership prepares students to become leaders in a globally-complex, and increasingly technological world. Students are required to complete an intensive Summer Institute that includes a major international experience. Students will broaden their knowledge, skills and abilities in communication, business acumen, global awareness and diversity, and technology. Innovation, creativity, knowledge of good leadership characteristics, ethics, leadership practices, and the ability to learn effectively and continuously will be emphasized.

III. Rationale

The outsourcing of blue collar jobs overseas has been going on for quite some time. However, a more recent phenomenon has been the outsourcing of white collar jobs, particularly in the information technology areas. The increase in university graduates in China and India, coupled with unlimited inexpensive access to a high-speed/bandwidth internet will cause a fundamental change in the requirements for U.S. university graduates, as the more routine business, science, and engineering jobs will move to lower labor cost areas. The problem is particularly acute in engineering and science due to the relatively low number of graduates compared to the rest of the world (China’s production of BS engineers is approaching 10 times the number in the US). To create a sustainable, quality future for the United States and the world, the leaders of tomorrow must have experience and knowledge across a broad spectrum of disciplines including technology, entrepreneurship, communication, and global business acumen. The ability of our graduates to develop, coordinate and lead projects globally will be paramount. Recognizing this change and responding to it will be crucial to the economic success of the United States and the standard of living of our children’s generation. The technological leadership program will help prepare students for this new and very different world.

Students in the program will have an increased awareness of their leadership abilities and responsibilities, increased leadership experiences, and knowledge of leadership principles and best practices in a global context. The students will have a competitive advantage in the job market and subsequent career or in graduate school. They will experience a shortened transition time from traditional business, engineering and science functions to leadership positions, and earlier global assignments.

While many universities in the state of Michigan offer programs to develop and enhance the leadership abilities of their students through Leadership Institutes and programs, the main focus of these programs is community, professional, and non-profit leadership. This certificate program in leadership will prepare students to lead in a global and technological setting.

List of Courses

A total of 25 credits are required for this certificate.

Seminar Courses

- UN1100 Pavlis Leadership Seminar 1 (1 credit)
- UN1200 Pavlis Leadership Seminar 2 (1 credit)
- UN2100 Pavlis Leadership Seminar 3 (1 credit)
- UN3100 Pavlis Leadership Seminar 4 (1 credit)

Summer Institute Courses

- UN3401 Environmental Stewardship (2 credits)
- UN3402 Language of Business (2 credits)
- UN3403 Language of Technology (2 credits)
- UN3404 Cultural Immersion (2 credits)
- UN3405 Language Immersion (2 credits)
- UN4050 Global Leadership Practicum (4 credits)

Note: Students will take UN3402 or UN3403 depending on their major. The content in the UN3405 courses will vary each year. The particular language that will be covered will be dependent on where the sites are developed for the international experiences. IIS is collaborating with the International Program Services Office and the Humanities Department to develop and deliver this course.

Other Required Courses

- UN2300 Leadership for a Global Technological World (3 credits)
- UN4100 Pavlis Leadership Practicum I (1 credit)
- UN4200 Pavlis Leadership Practicum II (2 credits)
- HU3120 Rhetoric and Scientific Communications (3 credits)

Note: All of the UN courses are new courses. It was determined that the UN course designation was the most appropriate one for these courses because the topics are very interdisciplinary and many of the courses will be team taught. This certificate program was designed not to be discipline specific.

Fall Semester		Spring Semester	Total
Pavlis Global Technological Leadership Program			
1st Year	Pavlis Leadership Seminar 1 UN1100 1 cr.	Pavlis Leadership Seminar2 UN1200 1 cr.	2
2nd Year	Pavlis Leadership Seminar 3 UN2100 1 cr.	*LeaderShape (January) Note: no credits are associated with LeaderShape Leadership for a Global Technological World UN2300 3 cr. <i>*LeaderShape or an equivalent program is required</i>	4
3rd Year	Pavlis Leadership Seminar 4 UN3100 1 cr.	Strategic Communication for Global Leadership 3 cr. <i>(Note: this is a special section of HU3120)</i>	4
Summer Institute	7 weeks on campus taking the following courses and preparing for International Experience: - Environmental Stewardship UN3401 2 cr. - Language of Business UN3402/ OR Language of Technology UN3403 2 cr. - Cultural Immersion UN3404 2 cr. - Language Immersion UN3405 2 cr. 5 weeks abroad followed by 2 weeks on campus Global Leadership Practicum UN4050 4 cr.		12
4th Year	Pavlis Leadership Practicum I UN4100 1 cr.	Pavlis Leadership Practicum II UN4200 2 cr.	3
Total Credits			25

Estimated Costs

Michigan Tech has received a multi-year \$2 million financial commitment from alumnus Frank Pavlis to fund the development of a leadership program. This gift covers scholarships for select students so that they do not have to pay for the additional credits associated with this program, course development, invited speakers, most of costs associated with the international experience, and some staffing. Additional scholarship funds are actively being sought from potential donors. Fundraisers from the Michigan Tech Fund and the Institute for Interdisciplinary Studies are seeking additional scholarship funds and looking for endowed gifts to the program.

The cost of developing and teaching the new courses and the costs associated with monitoring the program abroad will be funded through the multi-year gift. The best suited faculty to teach these courses will be sought from across campus. Faculty and staff associated with the Institute for Interdisciplinary Studies will teach some of the seminar courses. A PhD student in the Humanities Department is being supported to assist with the seminar courses and work with the students on their electronic portfolios and communication skills.

The Pavlis Institute is currently providing full stipend and tuition support for one graduate teaching assistant. The University has committed one teaching assistant to the program and the Pavlis Institute will pay for additional teaching assistants as they are needed. We expect most of the teaching assistants to be PhD students in the Scientific and Technical Communications program.

It is expected that revenue from the summer courses will generate and provide support for the program to cover the summer teaching expenses. A couple of years after the program is in place, there will be over twenty students taking 12 credits during the summer. Using \$300 as the tuition rate this would translate into over \$72,000 in tuition revenue per summer. The Summer Session currently offers departments an option to receive 67% of summer tuition collected to cover all of the costs associated

with the summer courses. With this option \$48,240 would be provided to IIS to cover instructional costs. We estimate the costs per course offered during the summer to be \$5000. There are five 2 credit courses offered each summer so this would total \$25,000. This would leave \$23,240 to go toward the expenses of the 4 credit international experience.

The program is being started with a pilot group of 11 students. Each year it is expected that 20 scholarship students will join the program along with other students who select to pursue the certificate program. Within five years it is expected that we will have over 100 students continuously enrolled in the program.

Planned implementation date

Fall 2008

Introduced in Senate: 3 October 2007

Adopted by Senate: 17 October 2007

Approved by Administration: 09 November 2007