

Revised 05/08/2009

PROPOSAL SUMMARY AND ROUTING FORM

Proposal Title: Create a Certificate in Surveying

Initiating Unit or Individual: Surveying Engineering

Contact Person's Name: Sayed R. Hashimi e-mail: hashimis@ferris.edu phone: 2632

Date or Term of Proposal Implementation: \_\_\_\_\_

- Group I - A – New degree/major or major, redirection of a current offering, or elimination of a degree, major or minor
- Group I - B – New minors or concentrations
- Group II - A – Minor curriculum clean-up and course changes
- Group II - B – New Course
- Group III - Certificates
- Group IV – Off-Campus Programs

Group/Individual	Signature	Date	Vote/Action *
Program Faculty	<i>Sayed Hashimi</i>	10/15/09	<u>6</u> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
<sup>school</sup> Department Faculty	<i>Thomas Haller</i>	11/25/09	<u>6</u> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Department Head / Chair	<i>Thomas Haller</i>	11/30/09	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
College Curriculum Committee	<i>Ron McKean</i>	12/14/09	<u>11</u> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Dean	<i>Thomas E. O'Neil</i>	1/5/10	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
University Curriculum Committee	<i>[Signature]</i>	1/25/10	<input checked="" type="checkbox"/> Support <u>8-0</u> <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Senate	<i>Richard Suggen</i>	1/20/10	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support
Academic Affairs	<i>[Signature]</i>	1/26/10	<input checked="" type="checkbox"/> Support <input type="checkbox"/> Support with Concerns <input type="checkbox"/> Not Support

\* Support with Concerns or Not Support must include a list of specific concerns. Votes must be shown for faculty groups. Administrators check appropriate action taken.

To be completed by Academic Affairs

President (Date Approved) \_\_\_\_\_ Board of Trustees (Date Approved) \_\_\_\_\_ President's Council (Date Approved) \_\_\_\_\_

VPAA  
JAN 26 2010  
PROVOST

**1. Proposal Summary**

(Summary is generally less than one page. Briefly: state what is proposed with a summary of rationale and highlights. Additional rationale may be attached.)

The purpose of this proposal is to create a certificate program in Surveying. All the courses within the Certificate Program are existing courses which means that no new courses will be created. The total number of credits for the certificate would be 10 to 13 credits.

Target date of implementation: The program's expected implementation date is Spring, or Fall 2010

Rationale: The targeted audiences for this program are students in the School of Built Environment, some programs in College of Arts and Sciences such as applied math, applied biology, or some students in the College of Business. It could also serve as a catalyst to recruit undecided majors into surveying engineering.

This proposal has been approved by the Surveying Engineering Advisory Committee.

The program does not require any additional resources in terms of faculty, facility, computers, and library material.

**2. Summary of All Course Action Required\***

**a. Newly Created Courses to FSU:**

**Prefix            Number            Title**

**b. Courses to be Deleted From FSU Catalog:**

**Prefix            Number            Title**

**c. Existing Course(s) to be Modified:**

**Prefix            Number            Title**

**d. Addition of existing FSU courses to program**

**Prefix            Number            Title**

To obtain a certificate a student must complete the following core courses for a total of 4-5 credit hours:

SURE 110 – Fundamentals of Surveying (MATH 120)	4 credits
or CONM 122 – Construction Surveying Layout (MATH 120)	3 credits

SURE 115 – Intro. To Computer Mapping	1 credit
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In addition, the student must complete two courses (6 or 8 credits) from the following list of courses:

SURE 215 – Surveying Computations (SURE 110)	3 credits
SURE 230 – Control Surveying (SURE 110)	4 credits
CENG 220 – Engineering Surveying (SURE 110)	4 credits
SURE 340 – Photogrammetry (SURE 110)	3 credits
SURE 365 – Legal Aspects of Surveying** (SURE 215, ENG 250)	3 credits

**e. Removal of existing FSU courses from program**

**Prefix            Number            Title**

**3. Summary of All Consultations**

**Form Sent (B or C)            Date Sent            Responding Dept.            Date Received & by Whom**

None needed

**4. Will External Accreditation be Sought? (For new programs or certificates only)**

\_\_\_\_\_ Yes                            \_\_\_\_\_X\_\_\_\_\_ No

If yes, name the organization involved with accreditation for this program.

**5. Program Check sheets affected by this proposal.**

## Additional Information

The proposed certificate program in surveying at Ferris is unique not only within the State of Michigan but other States as well. While there are several "Certificate" programs in surveying, one at Macomb Community College (MCC), in Michigan, and several in other States, the Ferris Certificate consists of only four courses for a total of 10-13 credit hours depending upon the options selected by the student. The majority of the Certificate programs in other States lead to licensure as a professional surveyor. Hence, the number of required credits for the Certificate is much higher, starting at 15 credits at some and up to 35 credits at MCC. The Michigan educational requirement for licensure is a four-year degree acceptable to the Board.

Because the program does not require any additional resources, gaining any number of students would be a positive development. As students realize the challenge of securing employment, particularly in Michigan, they might consider pursuing the Certificate program in surveying to broaden their appeal for employment. According to the US Department of Labor Statistics (DLS), the surveying and mapping technician will receive 21% growth in employment. In short, the DLS forecast states that "... employment of surveyors, cartographers, photogrammetrists, and **surveying technicians** is expected to grow much faster than the average for all occupations through the year 2016".

## End-of-Program Outcomes

The objective of the Certificate program in surveying is simply to give the Program completers a general exposure to the surveying practice and the capacity for employment with a real surveying degree. The student completing this Program should be able to:

- Perform basic differential leveling in the field
- Reduce differential leveling observations
- Recognize the concept of field data collection using conventional and modern electronic data collection instruments such as an electronic total station
- Recognize the concept of field data collection using global positioning system (GPS) instruments
- Recognize the basic concept of how to prepare a topographic map from actual survey data
- Perform traverse computations and simple traverse adjustment
- Develop an appreciation for establishing horizontal and vertical control for a small to medium size surveying project

## End-of-Program Assessment Plan

The assessment plan utilized for this program will include:

- Pre and post assessment in surveying coordinate geometry computations
- Standardized examinations in the courses taken by the student
- Preparation and examination of student portfolios
- Student surveys

College of Engineering Technology  
Surveying Engineering

FORM D

**Certificate in Surveying**

**Proposed Check Sheet**

Total credits required = 10 – 13 depending upon the options chosen

Required Core Courses

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or CONM 122 – Construction Surveying Layout (MATH 120)	3 credits
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Two courses (6 to 8 credits) from any of the following:

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SURE 230 – Control Surveying (SURE 110)	4 credits
CENG 220 – Engineering Surveying (SURE 110)	4 credits
SURE 340 – Photogrammetry (SURE 110)	3 credits
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**\*\* Writing Intensive**

The courses in parentheses indicate pre-requisites