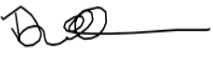





**TO:** The Honorable the Members of the Board of Regents

**FROM:** Douglas E. Lentivech 

**SUBJECT:** Houghton College – Master Plan Amendment for Bachelor of Science (B.S.) Degree Program in Electrical Engineering

**DATE:** April 26, 2018

**AUTHORIZATION(S):** 

### **SUMMARY**

#### **Issue for Decision (Consent Agenda)**

Should the Board of Regents approve a master plan amendment for Houghton to offer an Electrical Engineering program leading to the Bachelor of Science (B.S.) degree?

#### **Reason(s) for Consideration**

Required by State statute.

#### **Proposed Handling**

This question will come before the full Board at its May 2018 meeting where it will be voted on and action taken.

#### **Procedural History**

A Master Plan Amendment is necessary as this is the institution's first program in the discipline of engineering.

#### **Background Information**

Houghton College requested to register a B.S. program in Electrical Engineering. The purpose of the program is for students to learn to integrate engineering science,

humanities, physical science, social science, and mathematics within the contexts of engineering design and a Christian world view. The proposed program involves the intense development of practical engineering design knowledge and skills throughout all four years. This is accomplished through involvement in academic and industry-driven projects in digital design, digital signal processing, electronics, and other areas. Students learn through problem-based and project-based instructional experiences in nearly all engineering courses. Since it is a small program, students cultivate close and lasting relationships with faculty members. Christian faith is woven into all aspects of the program, providing a solid foundation for spiritual development and maturation, in addition to strong educational outcomes.

The program is 124 credits, consisting of 82 credits in major and 69 credits in liberal arts and sciences (with 27 credits counting for both). The engineering coursework include courses in circuits and analog electronics, digital signal processing, electromagnetic design, and a 16-credit engineering design sequence spanning across seven semesters. In addition to the engineering coursework, students are required to complete 11 credits in physics, 16 credits in mathematics, and 4 credits in statistics. The program was designed to satisfy ABET engineering program accreditation requirements and the College will seek accreditation at the earliest possible date.

The program follows Houghton College's standard undergraduate admission process. Students must complete a formal application, submit a transcript, a letter of recommendation, and a personal essay. SAT or ACT scores are recommended, but not required. Enrollment of new students in the proposed program will be no more than 20 students per year for the first few years. It is expected that student composition of the B.S. program in Electrical Engineering will reflect that of the College. The Houghton College student body is 61 percent female and includes citizens of 48 countries and 37 different states. Sixty-three (63) percent of the students are from the State of New York. Although affiliated with the Wesleyan Church, the student body includes representatives of 43 different denominations, including "No Religion".

The College currently has \$3.3 million committed for construction of a fifth floor on the Paine Science building to house the Mathematics Department and to remodel the 2nd floor classrooms into laboratory space for engineering. The newly available engineering space will include four faculty offices, an Electronics Lab which will be converted into the design lab, and two classrooms which will be converted into laboratory space for the other electrical engineering classes. Three existing full-time faculty will be teaching in the proposed program. New faculty to be hired include two Associate Professors and two Assistant Professors in electrical engineering. The first Associate Professor will be hired by the Summer of 2019 before the program starts and will serve as the lead faculty member for the program. The remaining three new hires will be added each year after that.

**Canvass Results:** A canvass of the institutions of Western New York as well as of all institutions in the state offering engineering programs was conducted to determine potential impact on current programs and resources. No objections were received.

**Department Review:** The Department has determined that the proposed program meets the standards for registration set forth in the Regulations of the Commissioner of Education.

**Recommendation**

VOTED: That the Board of Regents approve an amendment to the master plan of Houghton College to authorize the College to offer the B.S. Electrical Engineering program. This amendment will be effective until May 8, 2019, unless the Department registers the program prior to that date, in which case the master plan amendment shall be without term.

**Timetable for Implementation**

If the Board of Regents approves the master plan amendment, the Department will register the B.S. program in Electrical Engineering.