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**BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING TECHNOLOGY
ACCREDITATION REPORT AT THE UNIVERSITY OF NORTHERN IOWA**

Action Requested: Receive the accreditation report from the Bachelor of Science (BS) in Electrical Engineering Technology (EET) in the Department of Technology in the College of Humanities, Arts & Sciences at the University of Northern Iowa (UNI).

Executive Summary: The BS in Electrical Engineering Technology at UNI underwent its standard accreditation self-study review with the Engineering Technology Accreditation Commission of ABET, culminating in a site visit October 11-13, 2015. The review team identified program two weaknesses and two concerns, and offered an observation. One weakness and one concern were resolved. Based on institutional response, the remaining weakness was reduced to a concern, and along with the other concern, remains open. The Engineering Technology Accreditation Commission of ABET extended accreditation to the BS in EET program at the University of Northern Iowa to September 30, 2022, the maximum allowable time.

Background:

- ◇ **Board Policy.** This report complies with Board policy 3.8 on Accreditation Reporting, and aligns with strategic plan priority 1: Ensuring access to education and student success. It was submitted to the Board of Regents in October 2016. This review is to discuss the program improvements resulting from the accreditation visit.
- ◇ **Description of Program.** The Electrical Engineering Technology (EET) program is the *only* 4-year ABET accredited Bachelor of Science degree in EET in Iowa. The EET program prepares students for application-oriented engineering technology careers in circuits, conventional and renewable electrical power, analog/digital electronics, microcomputers, control systems, instrumentation, telecommunications and wired/wireless networking. The EET curriculum is a broad-based, technically-oriented program that emphasizes the application of today's technology to solve problems, design and develop products, and improve processes, procedures, equipment, and facilities. The BS degree program in EET offers a wide choice of courses in a variety of technical areas.

Coursework is applications-oriented, and student gain hands-on experience through laboratory experiences that are carefully integrated into the courses. In addition, EET students benefit from the strong emphasis placed on internship, cooperative education opportunities, senior design projects in local and regional industries, and the development of written and oral communication skills. UNI EET graduates are firmly rooted in modern technology and are able to offer their employers immediate contribution as team players who have problem solving, troubleshooting, production, implementation, and technical project management experience.

- ◇ **Accrediting Agency.** Accreditation Board for Engineering and Technology (ABET). The EET program was evaluated by the Engineering Technology Accreditation Commission (ETAC) of ABET. ABET's voluntary peer-review process is highly respected as it adds critical value to academic programs in the technical disciplines.
- ◇ **Purpose of Accreditation.** Accreditation is a process of quality assurance for a program that indicates it is recognized by peers in the field as having met national standards for quality

education. A degree from an ABET accredited program affirms to employers and graduate schools that the education received met global standards for technical education in the field.

- ◇ Accreditor Standards. Developed by technical professionals from ABET's member societies, the criteria focus on what students experience and learn. There are eight general criteria for all ABET programs, and five program specific criteria from the ETAC of ABET.
 - General Criteria areas
 - Students
 - Program educational objectives
 - Student outcomes
 - Continuous improvement
 - Curriculum
 - Faculty
 - Facilities
 - Institutional Support
 - ETAC program specific areas of knowledge and hands-on competence
 - Application of circuit analysis and design computer programming, associated software, analog and digital electronics, microcomputers and engineering standards to building, testing, operation and maintenance of electrical systems
 - Applications of physics or chemistry to electrical circuits in a rigorous mathematical environment at or above the level of algebra or trigonometry
 - Ability to analyze, design, and implement control systems, instrumentation systems, communications systems, computer systems or power systems
 - Ability to apply project management techniques to electrical systems
 - Ability to use statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of electrical systems

- ◇ Review Process. The EET program faculty began preparing for the self-study in fall 2014 by reviewing ABET standards and administering a survey to EET program alumni. Throughout spring 2015 program faculty reviewed student assessment outcomes, compiled survey results, and began writing the self-study. In June 2015 the self-study report was reviewed and revised by the chair of the Department of Technology, the Dean of the College of Humanities, Arts & Sciences, the Provost, and the President of UNI. The self-study was submitted on July 1, 2015.

Throughout the summer and early fall the faculty prepared a full portfolio about the program and its assessment processes and results. An evaluation team assigned by ABET visited UNI campus and evaluated the program October 11-13, 2015. The review team prepared an initial report to which the program could respond with evidence of remediation of any weaknesses or concerns within a due process window. After an additional 30-day window during which the program can provide additional evidence, ABET records a final status on each weakness or concern and assigns an overall accreditation status and time frame.

- ◇ On-Site Team Report. After the October 2015 visit, the review team report included weaknesses, concerns and observations. Weaknesses require action to strengthen compliance prior to the next evaluation. Concerns indicate the program satisfies the criterion, but a change in situation could change that status. Observations do not relate directly to accreditation action but may assist the institution in continuous improvement efforts.

- ◇ Weaknesses Identified by the Visiting Team. The review team identified two weaknesses that required a response. Institutional responses are included with the current ABET status.
 - **Weakness 1:** Program Educational Objectives require review by program constituents. It was determined that two constituencies were missing: students and community colleges.
 - *Institutional response:* In spring 2016 surveys were submitted to students and community colleges to request review of program educational objectives. Upon review of the survey responses, decisions to retain the existing objectives were made and documented.
 - *Status:* This finding is resolved.
 - **Weakness 2:** Institution publications must identify program accreditation status as ‘accredited by the Engineering Technology Accreditation Commission of ABET.’ The University catalog and program brochures incorrectly stated ‘...Technology Accreditation Commission of...’
 - *Institutional response:* The online version of the University catalog was revised, and future printed version will include the revision. Brochures are being updated and will be replaced when the current supply is exhausted.
 - *Status:* This finding is reduced to a concern until all active references comply with the requirement.

- ◇ Concerns Identified by the Visiting Team. The review team identified two concerns that currently meet accreditation standards, but are at risk of changing to a weakness or deficiency. These require monitoring by the institution and possible response.
 - **Concern 1:** Advisory committee must periodically review curriculum and provide advisement on current and future aspects of the technical field. There was no documentation of EET program advisory committee curriculum reviews since 2012.
 - *Institutional response:* The program held meetings of its Industry Advisory Board in spring 2016 to review curriculum. Minutes were submitted to ABET. The Board will continue meeting twice a year and review curriculum regularly.
 - *Status:* This finding is resolved.
 - **Concern 2:** Institutional support and leadership must ensure quality and continuity of the program. The Department of Technology has had five department heads in the last five years raising a concern about continuity.
 - *Institutional response:* The current department head has held the position since August 2015.
 - *Status:* This finding remains a concern until the department demonstrates continuity of leadership ensuring the quality and continuity of the program.

- ◇ Observations from Site Visit Team. Though unrelated to accreditation criteria or policies, the review team can offer observations that relate to program improvement. Only one observation was offered.
 - **Observation:** Program brochures and website were using an outdated ABET logo.
 - *Institutional response:* The outdated ABET logo has been removed from the website, and the new logo will be incorporated in the future.

- ◇ Program Accreditation Status. The Engineering Technology Accreditation Commission of ABET extended accreditation to the BS in EET program at the University of Northern Iowa to September 30, 2022, the maximum allowable time.