CONSULTANT RECOMMENDATION REPORT
Planning and Review Committee
Consultant Recommendation

Degree: Engineering Technology

Date of Review: February 2011

Program Director: John Schultz

PRC Consultant(s): Kimberly Zagorski, Marlan Patterson

Purpose of the Review: The review was conducted to assess the quality of the B.S. Engineering Technology degree program as part of the ongoing seven-year review cycle of UW-Stout programs.

Committee Findings: The PRC recommends continuation of this program through the next scheduled review in 2018 and that the recommendations made by the committee be implemented.

I. Abstract:

The UW-Stout Engineering Technology program prepares graduates for professional careers in mechanical design, electrical design, facilities, plastics, nanotechnology and production operations. The hands-on approach to learning which involves combining theory, practice, and experimentation trains program graduates to apply sound engineering and management principles to industrial problems. The program uses continuous quality improvement to adapt to changing technologies, changing student needs, and changes in the global society. This program has undergone significant changes. Prior program concentrations such as Packaging, Construction, Telecommunications and Graphic Arts have been spun off as separate programs. In 1998, a new core of more technology-based concentrations was designed. In 2001, the name of the program was changed from Industrial Technology to its present title. At one time this program’s precursor, Industrial Technology, was one of the largest programs on campus, but enrollment trends have been down since the 1980’s and the spin off of the above four concentrations into separate programs contributed to that downward trend. Enrollment bottomed out in 1999 and has been on the increase, in part, because of the 1999 program revision and 2001 name change.

II. Process Followed for Current Review:

The PRC consultants met with the program director to review the procedures and offer assistance. Data regarding several aspects of the program were collected from juniors and seniors currently enrolled in the ET program, key faculty and the advisory board. The data were analyzed and returned to the program director and PRC members. The program director then completed the self-study report and presented the report to the PRC. The
consultants then wrote the recommendation report. This report was forwarded to the dean for his response. The PRC reviewed the dean’s response, approved the recommendation report and forwarded the report to the Faculty Senate.

III. Previous Review:

The previous PRC review of the B.S. in Engineering Technology was conducted during academic year 2003/2004. That report was written by Ted Harris and Bill Bailey. The committee’s recommendations as well as the applicable responses are submitted below:

A. Previous Recommendation for Program Director

1. Pursue ABET accreditation. This accreditation is consistent with the program revision and change in title. Our program is now comparable to engineering technology programs throughout the nation and gaining this accreditation would confer the legitimacy the program deserves. Source: program report.

Response from Program Director: The pursuit of ABET accreditation for the ET program is a worthy goal and a priority of the college and the program. The program director agrees that this should be pursued. The program would benefit from external validation by increased opportunities for program graduates in both employment and further graduate education opportunities. Additionally, the university as a whole would benefit by having another program with this prestigious external validation.

However, it would be counter productive to all of these goals to apply for the ABET accreditation and be denied. It is likely under the current staffing and support model under which the program operates that ABET would deny accreditation on the principle of appropriate number of faculty.

It is clear from the February 2004 report “Faculty and Staffing Requirements to Support the Engineering Technology Program at UW-Stout” that the program is currently deficient in this area. As a result of this report and subsequent meetings with the Technology Department Chair, CTEM Deans, Provost, and Chancellor, additional course sections were approved for Fall semester 2004, however the shortfalls in this area really need to be addressed in a permanent faculty allocation manner.

Yet another faculty issue is that of the type of faculty that have primary commitment to the program. While significant advances have been made in the past three years in getting many of the engineering degree holding faculty to have secondary support for the ET program, most still would consider their primary affiliation to the
Manufacturing Engineering program.

It appears to the program director from the discussions at the above administration meetings that the institution either does not have the financial resources and commitment to find resources assure the quality and continuity of the engineering technology program by way of full time faculty assigned to this program as a primary responsibility at the present time.

Given that the shortcomings have been well documented in the “Assessment in the Major Reports,” Advisory Committee meetings, the PRC review, and the above study, clearly a problem area with the ET program has been identified and would be recognized by an ABET review committee. Hence, it would be unwise to request a review for accreditation without first addressing a well-known problem area.

2011 Summation of Consultants: The program is currently in the process of making the necessary adjustments to start the ABET application process.

B. Previous Recommendations for Department Chair

1. Focus on using this program as an incubator for new and innovative engineering technology initiatives.

   Response from Department Chair: The College has identified the Engineering Technology program as one with great potential growth in terms of enrollment and program development. Several meetings with key stakeholders have been held over the past academic year to identify the technology related fields to pursue. Areas identified by the advisory committee that have a good fit with the current ET program include: Industrial Engineering Technology – Environmental, Health & Safety; Biomedical Engineering Technology (these three have potential for possible joint ventures with CAS); Computer and Electrical Engineering Technology, Nano-Engineering Technology; and Systems Engineering Technology. In order to grow in these new areas, additional resources are required.

   The ET program has shown significant growth in student numbers, and fantastic improvement through the development of appropriate student learning outcomes and the planned program revision. The fundamental problem of sufficient faculty to support the number of students enrolled remains an issue that has not been addressed in a permanent manner. This program is a perfect fit for the special mission of the University of Wisconsin-Stout and presents tremendous opportunities for growth into new concentration areas that are unique offerings for the UW System. These concentration areas combine theory, practice and experimentation to prepare graduates for professional positions that meet the needs of a changing society.

   2011 Summation of Consultants: The program has, and is currently looking to meet current developments in new Engineering Technologies. Since the 2003/2004 Review, the concentration in nanotechnology has been created; further development
2. Additional faculty and resources are needed to enhance the program.

*Response from Department Chair:* During the spring semester of 2004, the program director completed a Faculty and Staffing Requirements Profile for the Engineering Technology program at UW-Stout. That report was included in the appendix of the original PRC self study. The messages in the staffing report have been echoed in the PRC Consultants report. Basically stated: the Engineering Technology program has experienced an increase in enrollment over the past three years while there has been a simultaneous decrease in the number of faculty and staff available to teach courses required in the program.

To meet the needs of the ET program, the College has reallocated internally to attempt to meet the demand caused by the increase in enrollments. Using 2 FTE from another department, additional courses were offered for the spring ’04 and fall ’04. These have been temporary solutions to a much larger problem. Enrollment in the 13 undergraduate and graduate programs housed in CTEM has increased steadily over the five years, with no additional resources to serve the students. High demand programs (including Construction, General Business, Apparel Design and Development and Engineering Technology) all require additional resources. In order the College to foster growth in the ET program, resources need to be reallocated from the university level.

*2011 Summation of Consultants:* While additional faculty have been hired, there still remains a problem of enough tenure-track faculty to support the needs of the program as it continues to innovate.

3. Consider entry into one of the emerging technology fields. For example, the Twin Cities has become a center for biomechanical engineering, and since we are located close to this technological cluster, it may make sense to pilot a concentration in this field.

*Response from Department Chair:* The College has identified the Engineering Technology program as one with great potential growth in terms of enrollment and program development. Several meetings with key stakeholders have been held over the past academic year to identify the technology related fields to pursue. Areas identified by the advisory committee that have a good fit with the current ET program include: Industrial Engineering Technology – Environmental, Health & Safety; Biomedical Engineering Technology (these three have potential for possible joint ventures with CAS); Computer and Electrical Engineering Technology, Nano-Engineering Technology; and Systems Engineering Technology. In order to grow in these new areas, additional resources are required.

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2011 Summation of Consultants: The program has, and is currently looking to meet current developments in new Engineering Technologies. Since the 2003/2004 Review, the concentration in nanotechnology has been created; further development of concentrations is anticipated in the Fall 2011 program revision.

C. Previous Recommendations for Dean

1. Focus on using this program as an incubator for new and innovative engineering technology initiatives.

Response from Dean: The College has identified the Engineering Technology program as one with great potential growth in terms of enrollment and program development. Several meetings with key stakeholders have been held over the past academic year to identify the technology related fields to pursue. Areas identified by the advisory committee that have a good fit with the current ET program include: Industrial Engineering Technology – Environmental, Health & Safety; Biomedical Engineering Technology (these three have potential for possible joint ventures with CAS); Computer and Electrical Engineering Technology, Nano-Engineering Technology; and Systems Engineering Technology. In order to grow in these new areas, additional resources are required.

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2011 Summation of Consultants: See comments under B1

2. Additional faculty and resources are needed to enhance the program.

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2011 Summation of Consultants: See comments under B2

3. Consider entry into one of the emerging technology fields. For example, the Twin Cities has become a center for biomechanical engineering, and since we are located close to this technological cluster, it may make sense to pilot a concentration in this field.

Response from Dean: The College has identified the Engineering Technology program as one with great potential growth in terms of enrollment and program development. Several meetings with key stakeholders have been held over the past academic year to identify the technology related fields to pursue. Areas identified by the advisory committee that have a good fit with the current ET program include: Industrial Engineering Technology – Environmental, Health & Safety; Biomedical Engineering Technology (these three have potential for possible joint ventures with CAS); Computer and Electrical Engineering Technology, Nano-Engineering Technology; and Systems Engineering Technology. In order to grow in these new areas, additional resources are required.

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2011 Summation of Consultants: See comments under B3

IV. Current Year (2010-2011) Program Review:

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<td>2. Outdated lab equipment</td>
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<td>3. Overlap of course content and course scheduling</td>
<td>PD report, student surveys, advisory board</td>
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<td>4. Potential lack of concentrated coordinators</td>
<td>PD report, advisory board</td>
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Recommendations for the Program Director

John Schultz

1. Continue with plans to seek ABET accreditation.
2. Work with Key Faculty and Advisory Board to identify areas of content overlap and reduce conflicts with course scheduling.
3. Work with Key Faculty and Advisory Board to identify faculty advisory to concentration majors.
4. Apply for lab modifications to purchase current machinery

Recommendations for the Department Chair

Scott Springer, Interim Chair

1. Support Program Director’s program modifications to prepare for ABET accreditation.
2. Work with Program Director to identify the labs in most dire need of modification and work to secure lab modification funds.

Recommendations for the Dean

Dr. Jeff Anderson
1. Seek additional faculty lines, to help with ABET accreditation and alleviate problem of course access.
2. Work with program director to allocate funding to modernize lab equipment.