# How Well Are We Doing? Focusing on Program Assessment

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## Abstract

The very first step in planning for an accreditation visit by ABET or other agencies usually involves deciding on assessment methods that can be readily included in the self-study reports. For a non-degree-granting department such as the General Engineering Department at the University of Wisconsin-Platteville, where do we begin? This paper is a discussion of possible assessment measures for departments such as our's and also raises questions about what more could be done.

## Introduction

The very first step in planning for an accreditation visit, either by ABET or other agencies such as North Central Association of Colleges and Schools (NCACS) in the case of our university, usually is to begin to search for assessment methods that can be readily included in the self-study reports. For a department such as our's, the General Engineering Department at the University of Wisconsin-Platteville (UW-P), where do we begin? It is not a degree-granting department, but rather feeds students into the pipeline of the majors after they have completed the basic science and core engineering science courses.

This paper is a discussion of assessment measures that are employed by the General Engineering Department at UW-P and raises questions about what more could be done.

Assessment is an integral part of the academic process. It requires and reflects a long-term commitment to the program and its constituencies, viz., the students, alumni and industry partners. Like most engineering programs, we have had a long history of self-assessment and

improvement. However, we have had little documentation of processes already in place. Although we are in the middle of an ABET accredited cycle, there has been significant pressure from the campus administration to document all assessment measures for all departments within the next year. The intent for assessment within our area is to ensure that the curriculum meets minimum requirements for engineering and science content, that students receive proper advisement, that faculty have appropriate qualifications and that the facilities and institutional support are adequate. Assessment ensures that institutions adopt methods to continuously study and improve their program by processes that involve all of their constituencies.

## What Are We Doing?

The General Engineering (GE) program at UW-Platteville is designed to prepare students for admission into one of seven professional engineering programs available at this university. All new freshmen engineering students and transfer students who do not immediately qualify for a professional program must begin their studies at UW-Platteville in the General Engineering Department.

The GE Department has the following continuing goals, which directly support the mission of the University and the College of Engineering, Mathematics, and Science, where it is housed:

1. Prepare students for entrance into the professional engineering programs;
2. Smooth the transition from high school to college for new freshmen in engineering through proper advising, schedule-building, counseling and monitoring;
3. Assist freshmen and transfer students in career counseling related to both engineering and non-engineering fields;
4. Recruit and retain high quality high school and transfer students interested in majoring in engineering with special emphasis on attracting women and minorities; and
5. Maintain the high quality of instruction and professional development necessary to ensure the accreditation of the professional programs.

General Engineering students have varied backgrounds; some are better prepared for their college studies than others. The GE program offers students an opportunity to correct academic

deficiencies and ensures that students enter the professional programs with suitable preparation. The GE program also allows students several semesters to finalize their choice of major.

Because there are limits to the number of students that each professional program can accommodate, admission to the individual professional programs is somewhat competitive. Twice a year, each degree-granting department establishes a minimum Core Grade Point Average (CGPA) required for admission to its program(s) at the end of the semester. Admission to a specific program is based on the program CGPA requirement in effect during the semester in which the student completes the GE requirements.

Assessment practices with (frequency of use), *purpose of assessment* and how it is used in the GE Department are presented below. These are carried out on a regular basis to monitor the success of the GE program:

- A Fundamentals of Engineering exam (Twice a year) - *to determine if graduates have the skills to qualify for licensing, to keep records for ABET accreditation.* Make updates in program and course content in order for the program to stay current; measure effectiveness of the program and implement changes when needed.
- A Matriculation into professional programs (Ongoing) - *to track placements in the professional programs, to keep records for ABET accreditation.* Make updates in program and course content in order for the program to stay current; measure effectiveness of the program and implement changes when needed.
- A Student assessment of courses (Semester) - *to find out how the students perceive the coverage of program outcomes*. Feedback to instructors and department to improve coverage of program outcomes in courses.
- A Faculty review of course contents (Yearly) - *to find out how the teaching faculty and staff perceive the coverage of program outcomes* - Feedback to instructors and department to improve coverage of program outcomes in courses.
- A Exit surveys of graduating majors from the degree programs (Semester) - *to find out how the graduating students perceive the effectiveness of GE courses in preparing them for*

*their majors*. Identify weaknesses and strengths in the program. The mechanism involved in this assessment practice has not yet been finalized.

As with any department, the GE curriculum is constantly under scrutiny and revision. A major review was completed in preparation for the Fall 2000 ABET visit. The study included a complete examination of the GE courses and evaluation of the design experience in each. Since we begin with freshmen and these students remain with us for approximately two years, we begin with assessing freshman needs. Through our relatively small introduction to Engineering classes, each instructor attempts to discern attitudes and motivational patterns that students bring with them. This reflects prior educational experience and also gives a preliminary indication of potential drop-outs. This routine assessment led to the restructuring of GE 1020 Introduction to Engineering. A committee including faculty from most of the degree granting departments met several times during the past academic year and formulated a new version of the course. Beginning in the Fall 2003 semester it will be replaced by a sequence of two courses - GE 1000 Introduction to Engineering, and GE 1030 Introduction to Engineering Projects.

## Are We Doing Enough?

We now come to the final question - Are we doing enough? Virtually all programs have numerous mechanisms in place to ensure that the desired objectives of the program are being achieved. However, not all of these mechanisms are suitable for use as quantitative assessment tools. Mechanisms that are qualitative can be quite important as well. Programs must regularly perform self-assessment as part of their normal operations, regardless of whether they seek accreditation or not. For this, the qualitative mechanisms are usually the most commonly used and are relied upon for the day-to-day operation of the program. However, the accreditation process seeks to be more objective and therefore, requires that quantitative measures are also in place in addition to qualitative measures. For the GE Department at UW-Platteville, we are using a combination of both. The bottom line for us has been effective faculty and instructional academic staff involvement and proper documentation of processes.

## References

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