

## A New Course Evaluation Tool for ABET 2000

*Kevin Scoles, Nihat Bilgutay*  
*Electrical and Computer Engineering*  
*Drexel University*  
*Philadelphia, PA 19104*

*Jack McGourty*  
*School of Engineering and Applied Science*  
*Columbia University*  
*New York, NY 10027*

**Abstract** - *The Drexel University College of Engineering has developed a new course evaluation tool. This tool collects student opinion on the effectiveness of teaching in technical core areas, as well as on student's attitudes on their course and the faculty teaching effectiveness.*

One of the goals of an educational enterprise is the continuous improvement of the education process. For this purpose, the Drexel University College of Engineering has developed and tested a new course evaluation tool. This tool provides feedback on student opinion on the effectiveness of teaching in technical core areas, as well on student's attitudes about their course and the faculty's teaching effectiveness.

Tool development began in the summer quarter 97-98, and a pilot was run on five courses in the Electrical and Computer Engineering Department in the fall quarter 98-99. After review and revision in a College committee, the form was used in the winter quarter 98-99 across all courses in Electrical and Computer Engineering and in over 10% of the courses in the other four departments in the College of Engineering.

The evaluation form has three parts. The first is a set of 3 to 6 statements provided by the course instructor. Each statement covers one of the desired technical core outcomes of the course. An example of a statement used in an electronic devices course was: "An understanding of the operation of devices based on the pn junction, including the photodetector, solar cell, and LED. An overview of applications". Students are asked to retrospectively judge their own competency in each core area when the course began and when it finished. Responses are given on a scale of A (5 points) to E (1 point). From the results we can get a quantitative value for the shift in the class's understanding, and draw a conclusion as to whether the desired outcomes have been achieved. The results can be tracked as the course is taught in different terms, by different faculty, or with different methods.

The second part is made up of a set of eleven questions that relate directly to ABET Criteria A through K. Our plan is to match these responses against a set provided by individual faculty or curriculum committees.

The final part of the course evaluation looks at course

details such as the use of teamwork and computer tools, and such issues as whether the instructor was prepared, had a positive and helpful attitude toward the students and provided timely feedback on student performance. Student's written comments are also invited.

The evaluations done to date have used computer-readable response forms. The results are returned in hardcopy and in tab-delimited text files suitable for importing into spreadsheet applications. The electronic version is especially suitable for archiving for future ABET accreditation visits. A transition to a web-based survey is planned.

We have made significant progress in revising our course evaluation methods, and we expect the evaluation instrument to continue to evolve and improve. A byproduct of the use of the evaluation tool is thought now being given to defining course objectives and outcomes, and on writing a syllabus to make these goals more clear to students. Other issues being addressed now are data warehousing, hardware and personnel needs, privacy issues, and the desirability of the publication of results.

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