

A National Survey of Engineering Technology Programs

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Abstract

According to the Department of Education's Integrated Postsecondary Education Data System, there were 414 public, private, or for-profit academic institutions awarding at least one 4-year engineering technology (ET) degree in 2014 (NAE, 2016). Within this group, 38 awarded 100 or more degrees that year. These institutions offer wide selection of programs in various engineering disciplines. Focusing on hands-on learning, ET programs and our graduates are making transformative changes to the industry and in our communities. As ET programs thrive around the country, we need to focus on program-wide continuous improvement to prepare our students for evolving challenges in engineering and technology. One way to drive continuous improvement is by comparing a program with its peer institutions' program or that of a national average. Many programs such as physics and chemistry conduct national surveys that provide program-specific national benchmark data in areas such as curriculum, undergraduate and graduate programs, faculty, minorities, degree awarded, graduate employments, etc. These benchmark data permit individual department to see where they fit on the national landscape. Unfortunately, ET programs do not have such national benchmark datasets. ASEE college profiles include some data such as enrollment, faculty and research, degree awarded etc.; however, such data have not been aggregated to portray a national picture of ET programs (ASEE, 2017). If we don't know the current status of the ET programs, we may not know how to progress and measure progress of ET programs as a whole. The objective of this study is to conduct a national survey of 4-year ET programs in the US.

This study was initiated in March of 2019, and it engaged the whole ET community. For this study a systematic process was used to design and conduct the survey. Authors first communicated with the ET community to find out ET data needs. A short data needs email was sent out through the ETD listserv and requests were solicited to be included in the survey. The survey's primary focus was on following five major areas:

1. Curriculum – questions focused on ET programs taught, total no of students in the program, average class size
2. Students – questions focused on demographics – gender, age, race etc., faculty to student ratio
3. Faculty – questions focused on number of faculty, gender, tenure/non-tenure, course load, typical faculty commitment for teaching, research and service
4. Diversity – questions focused on percent female student, percent minority students, percent female faculty, percent minority faculty
5. Degree and Employment – questions focused on degree awarded and who hires ET students

Once questions were decided, the survey was created in REDCap, which is a secured tool to conduct surveys at the authors' institution. Concurrently, authors worked on an institutional review board (IRB) proposal and submitted it for approval. Once IRB approval was received, the survey was sent out to ET program chairs and coordinators around the country. The survey remained open for several months. Several reminders were sent requesting chairs and coordinators to complete the survey. A total of 38 responses were received with a response rate of 24%. However, 26 responses were complete and used for data analysis. This poster presents the results of the data analysis on the above-mentioned areas in ET programs. The result depicts a big picture of ET programs, and it will help ET leaders to devise strategies to bring ET programs to the next level.