PART IV.
COMMENTARY ON PAPERS #15 TO #18: 
Other topics related to engineering education

The four papers in this part are on the important topics of cheating, assessment of learning, student evaluation of teaching, and the professional skills our graduates will need at work. The first three papers are from the CEE Random Thoughts column. In paper #15 Rich Felder first discusses how prevalent cheating is in college. To reduce cheating, he recommends being very clear in the course syllabus on what actions will be considered cheating. If a student is suspected of cheating, follow your formal institutional process.

In paper #16 Rich Felder and Rebecca Brent discuss the assessment of the ABET student outcomes associated with professional skills (ABET criteria 3d, and 3f to 3j) using rubrics or checklists. An example rubric is given for criterion 3d (teamwork) and an example checklist is presented for criterion 3g (written communication). This paper is useful since most schools ask all instructors of required undergraduate courses to do assessment of some of the 11 student outcomes listed under ABET criteria 3 a-k.

In paper #17 Rich and Rebecca tackle the thorny issue of students rating their instructors. After exploding a number of myths (e.g., that instructors who get low ratings from their students are likely to get good retrospective ratings from alumni), they note that some common ideas about student ratings are true (e.g., students rate enthusiastic instructors highly). The final third of the paper, which appears to be aimed at administrators, discusses the characteristics of a good teaching evaluation scheme.

Paper #26 (Felder, et al., summer 2000) in Part VI of this collection also discusses assessment and student evaluation of teaching.

Don Woods, Daina Briedis, and Angie Perna present, in paper #18, an extensive literature review and new survey data on the professional skills engineering graduates will need to have or rapidly develop in industry. The results showed that the 10 most important skills, all of which had averages between vital/absolutely essential and very important, were: oral communication, written communication, problem solving, time management, decision making, critical thinking, initiative, teamwork, self-confidence, and trust. In general, these results agreed with other surveys. The authors also cite a paper by Honor Passow [JEE, 101(1), 95 (2012)] on the perceived importance that engineers in industry place on the ABET criteria. Passow’s paper will be of interest to anyone preparing for an ABET visit. Paper #25 (Woods, et al., 2000) also explores methods to help students develop professional skills.