

## Final Report on the Review of Undergraduate Engineering Programs

The Henry Samueli School of Engineering

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The overall goals of the proposal for the assessment grant were to broaden the involvement of faculty and constituencies with the accreditation process, bring greater understanding of the assessment process and its role in continuous improvement, improve the sustainability of the assessment process, and prepare for an official general review in 2013.

### 1. Broaden the involvement of faculty and constituencies with the accreditation process.

Previously, The Henry Samueli School of Engineering held monthly in-house workshops to involve faculty in the accreditation process. With an upcoming general accreditation review of ten engineering programs in 2013, the School wanted to broaden the involvement of the faculty and its constituents in the accreditation process. To this end, the School hosted a four-day retreat, an internal review site visit that closely resembled an official site visit, including an experienced external evaluator. On Oct 28-31, 2012, the internal review site visit included lab tours of nine engineering programs, interviews with the Deans from both The Henry Samueli School of Engineering and the Donald Bren School of Information and Computer Sciences, six Department Chairs, eleven Program Leads, and faculty from six departments: Computer Science (CS), Biomedical Engineering (BME), Chemical Engineering and Materials (ChEMS), Civil and Environmental Engineering (CEE), Electrical Engineering and Computer Science (EECS), and Mechanical and Aerospace Engineering (MAE). Others attending included senior design instructors, program curriculum committees, current students, and five practicing engineers from industry, four of whom are alumni. In total, sixty-nine faculty from The Henry Samueli School of Engineering and the Donald Bren School of Information and Computer Sciences participated in the internal review site visit.

### 2. Bring greater understanding of the assessment process and its role in continuous program improvement.

During the Fall '12 and Winter '13 quarters, The Henry Samueli School of Engineering offered monthly in-house workshops featuring best practices by Program Leads in *selected* aspects of the *assessment* process and its role in continuous program improvement. Approximately 10-15 faculty attended each workshop. Topics included:

*Writing Performance Criteria for Student Outcomes* - Fadi Kurdahi

*Direct Assessment vs. Indirect Assessment of Achievement of Student Outcomes* - John LaRue

*Summarizing Results of Assessment* - Dan Hirschberg

*Proposing Program Changes for Continuous Improvements* - Program Leads

*Using a Rubric for Assessment* - Jeff Foresta

### 3. Improve the sustainability of the assessment process.

Additionally, during the Fall '12 and Winter '13 quarters, The Henry Samueli School of Engineering offered monthly in-house workshops featuring best practices by Program Leads and key staff in *all* aspects of the *accreditation* process specifically to improve the sustainability of the assessment process. Approximately 10-20 and staff attended

each workshop. Topics included: accreditation criteria, self-study questionnaire, course materials displays, lab safety, and site visit preparation.

#### **4. Prepare for the official general review in 2013.**

In October 2012, The Henry Samueli School of Engineering hired an experienced external evaluator to review ten self-study reports, and conduct an extensive internal review during a four-day site visit, including interviews with faculty from six departments in two Schools. Additionally, the external evaluator provided additional reviews of self-study reports. The external evaluator shared both specific and general suggestions for continuous improvement at both the program level and the process level.

In January 2013, the official general review began with a request for an evaluation from the Chancellor. By July 2013, each of the ten undergraduate engineering programs submitted self-study reports. Currently, the ten undergraduate engineering programs are undergoing a general review. A three-day site visit took place in October 2013. The site visit included 15 external reviewers, 79 faculty from both The Henry Samueli School of Engineering and the Donald Bren School of Information and Computer Sciences, 7 faculty from outside support units on campus, 13 campus leaders (two faculty and eleven key staff), 36 key staff members from within the Samueli and Bren Schools, 10 individuals from industry, 13 alumni, and 208 current students (BME=12, CEE=26, ChEMS=69, CS & EECS=69, MAE=32), for a total of 381 participants.

#### **5. Conclusion**

The assessment grant provided matching funds for an extensive internal audit of ten undergraduate programs in 2012, thereby successfully broadening the involvement of faculty and other constituencies with the accreditation process, helping to bring greater understanding of the assessment process that leads to continuous program improvement, improving the sustainability of the assessment process, and supporting faculty as they prepared for an official general review in 2013.