

Program Educational Objectives

**Electrical Engineering Department
College of Engineering University
of South Florida**

Revision Date: December 20, 2012

The Electrical Engineering Department in the College of Engineering at the University of South Florida is committed to graduating electrical engineers who shall within a few years of graduation:

- Demonstrate a progression in technical competence and increasing responsibility in the practice of engineering.
- Engage in written and oral professional communication within and beyond the engineering community.
- Continue to develop professionally through life-long learning, advanced education, and other creative pursuits in science and technology.

Consistency of the Program Educational Objectives with the Mission of the Institution

The program educational objectives of the Electrical Engineering Department are consistent with the mission of the department, college and university as presented in the following table. To summarize this mapping between program educational objectives and the mission statements:

- Program Educational Objectives 1 and 2 are consistent with the mission of meeting high standards of student success by providing access to a learner-centered, high quality educational program.
- Program Educational Objective 3 is consistent with the mission of producing graduates that are prepared for advanced education and life-long learning and therefore capable of engaging in the process of research and scientific discovery for the benefit of local, regional and global communities.

| Program Educational Objectives: The Electrical Engineering Department in the College of Engineering at the University of South Florida is committed to graduating electrical engineers who shall within a few years of graduation: | Relevant Portion(s) of the Mission of the Institution |
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| Demonstrate a progression in technical competence and increasing responsibility in the practice of engineering. | <p>Department: Provide a high quality education in electrical engineering for our students and practicing professionals</p> <p>College: Providing a high quality education for our students and practicing professionals</p> <p>University: Student access and success in an engaged, and interdisciplinary, learner-centered environment</p> |
| Engage in written and oral professional communication within and beyond the engineering community. | <p>Department: Provide a high quality education in electrical engineering for our students and practicing professionals</p> <p>College: Providing a high quality education for our students and practicing professionals</p> <p>University: Student access and success in an engaged, and interdisciplinary, learner-centered environment</p> |
| Continue to develop professionally through life-long learning, advanced education, and other creative pursuits in science and technology. | <p>Department: Create new knowledge and solve real world problems via innovative research, and disseminate this information for the benefit of society; to engage in effective regional, national and international service and outreach</p> <p>College: Creating new knowledge and solving real world problems via innovative research; engaging in effective community service and outreach</p> <p>University: Research and scientific discovery, including the generation, dissemination, and translation of new knowledge across disciplines; to strengthen the economy; to design and build sustainable, healthy communities; Embracing innovation, and supporting scholarly and artistic engagement to build a community of learners together with significant and sustainable university-community partnerships and collaborations.</p> |

Program Constituencies

To accomplish the program educational objectives the significant constituencies of the department were identified and a review/feedback process is in place to continuously improve the curriculum and the degree to which the program educational objectives are being met. The faculty identified the primary Electrical Engineering Department constituencies consisting of the following groups:

- EE Students and Alumni
- Industrial Employers/Managers/Supervisors of Alumni
 - Local/State (ATK, CACI, CAE USA, GE Aviation, GTE Services, Honeywell, Harris, Jabil, LCEC, Lockheed-Martin, Motorola, The Nielsen Company, Raytheon, Tampa Microwave, TEAMWORKnet, Verizon)
 - Out-of-State (ITT, RF Micro Devices, Texas Instruments, TriQuint Semiconductor, USAF/Army/Navy)
- EE Department Industrial Advisory Board Members
 - Draper Laboratory – William Ostrowski, Special Programs Directorate
 - ITT Exelis – Michael Wyatt, Chief Scientist
 - Jabil – Marco Mayor, VP of Engineering
 - KEYW Corporation– Larry Langebrake, Hardware Manager
 - Lockheed Martin – Roy Street, Production & Test Senior Manager
 - Raytheon – Dan Levis, Regional Chief Technologist
 - Sciperio – Ken Church, President
 - Texas Instruments – Larry Geis, Product Manager
 - The Nielsen Company – Dave Wright, Engineering Leader
 - TriQuint Semiconductor – Catherine Chandler, College Program Manager

The constituents are called upon in an ongoing/periodic basis to provide guidance in development of the objectives and to assess our performance in meeting them. Primary tools used in this process include alumni surveys (distributed periodically but typically every ~3 years) and employer surveys (distributed periodically but typically every ~3 years). Feedback from the Industry Advisory Board is received at meetings that are held each December and April, in conjunction with the Senior Capstone Poster Design Competition.

The program educational objectives (PEOs) have been determined specifically to ensure that the EE Department meets the needs of its constituencies. The industrial/government employers and advisory board members represent the general areas of electrical circuits/systems and design (e.g. Jabil, Draper Laboratory, SRI, US Army), electronic materials (e.g. TriQuint Semiconductor, Sciperio) and communications (e.g. Texas Instruments, Raytheon, Lockheed Martin, Verizon, ITT Exelis, The Nielsen Company); thus, PEO 1 clearly aligns with the needs of these constituencies. Through the survey tools, these constituencies also have opportunity to recommend changes to each of the program educational objectives to more closely align with their needs. Alumni of our department similarly have the opportunity to express their opinion on the value of the education they received and the appropriateness of the program educational objectives.

Process for Revision of the Program Educational Objectives

The EE Department's Accreditation Committee, which reports to the Academic Affairs Committee and has oversight responsibility for the department's ABET and SACS assessment activities, establishes, reviews and maintains the program educational objectives. Proposed changes to the objectives are presented to the department faculty to be approved (or not

approved). Feedback from external constituencies, e.g. from meetings of the Industrial Advisory Board and from alumni and employer surveys, is also factored into this process as described below.

The program educational objectives in place during the 2007 ABET review were found not to be satisfactory. Specifically, it was stated that "...the current objectives are stated in a manner that appears to be more descriptive of actions undertaken by the program. Without a clearer articulation of specific graduate accomplishments, the potential exists that the objectives and assessment processes will diverge, jeopardizing future compliance with this criterion." The objectives in place in 2007 were as follows:

- To provide our graduates with the knowledge and skills that are necessary for them to gain employment and establish a career as an Electrical Engineer.
- To provide our graduates with the knowledge and skills that are necessary for them to be accepted into graduate programs and to complete graduate degrees.

In fall 2011, spring 2012 and fall 2012 the Accreditation Committee revised the PEOs in order to better represent the department's overall aims in meeting our program outcomes and to more clearly support the department's mission, i.e. to address specific graduate accomplishments within the first few years after graduation. The process to develop the new PEOs included a) surveying the program educational objectives of exemplary/peer institutions, b) discussions with faculty members in other departments in our college that are involved in the accreditation process, and c) deliberations within the committee as to how best to map our program outcomes into the PEOs.

The revised program educational objectives were approved by the entire faculty of the department. The PEOs were also reviewed and unanimously approved by the department's Industrial Advisory Board at the fall 2012 meeting. Finally, the objectives were a point of inquiry on alumni and employer surveys.