Revised Assessment Plan
Electrical Engineering Technology Program
College of Engineering Architecture and Technology
Oklahoma State University
Spring 2003

1. **Name of Academic Program**

   Electrical Engineering Technology

2. **Degree programs that are assessed under this plan**

   B. S. in Engineering Technology
   Electrical Engineering Technology Program
   Oklahoma State University Major 4261

3. **Mission, objectives or goals of the Electrical Engineering Technology program:**

   The Department of Electrical Engineering Technology (EET) has goals that are congruent with the three mission charges of Oklahoma State University–instruction, research, and extension. The goals of EET for each of these missions are described below.

   Goals for instruction

   Goal 1: Offer a rigorous, quality program that is TAC/ABET accredited.

   Goal 2: Provide support for continuous improvements in teaching methods and effectiveness.

   Goal 3: Attract outstanding students and educate them to be highly qualified in electrical engineering technology.

   Goals for research

   Goal 1: Encourage and support faculty to develop funded research programs and to become recognized experts.

   Goal 2: Develop and solidify collaborative relationships between EET and the industry for research and development.

   Goal 3: Contribute to the economical growth of the state, nation, and world through applied research.

   Goals for extension and public services

   Goal 1: Develop training seminars for engineers in industry in selected areas.

   Goal 2: Provide educational opportunities to employees in engineering and manufacturing companies.

OBJECTIVES

In order to achieve these goals, we will accomplish the following specific objectives:

Objectives for instruction

Goal 1: Offer a quality program that is TAC/ABET accredited.
Objectives related to this goal are:
1. Review each year every course for the relevancy and currency of individual **course educational objectives**.
2. Compare the **course outcome measurements**, i.e., examinations, laboratory experiments, student presentations, written reports, etc., against the stated course educational objectives.
3. Make adjustments to each course that does not fully meet its **course educational objectives**.
4. Pursue **program outcomes** in accordance with the specific published TAC/ABET outcomes criteria (see 4. Below).
5. Develop, measure and correlate **program educational objectives** with program outcomes.
6. Develop metric tools capable of sustaining a continuous review of both program educational objectives & outcomes.
7. Make the necessary adjustments to the program when **program educational objectives** are not fully met.

Goal 2: Provide support for continuous improvements in teaching methods and effectiveness.
Objectives related to this goal are:
1. Adjust faculty workloads to facilitate the delivery of a first rank program.
2. Encourage collaboration with industry, and make the necessary adjustments to allow for eligible faculty members to participate.
3. Encourage faculty members to attend education-related professional conferences of national or international level, and provide travel funding when needed.

Goal 3: Attract outstanding students and educate them to be highly qualified professional engineering technologists.
Objectives related to this goal are:
1. Contact, coordinate with and visit feeder institutions to facilitate student intake.
2. Be active in attracting a qualified and diverse student body.
3. Seek and develop sources of scholarships for EET students.

Objectives for research

Goal 1: Encourage and support faculty to develop an interest in funded research programs and to become recognized experts.
Objectives related to this goal are:
1. Encourage and help faculty members who have an interest to find funding opportunities.
2. Encourage every faculty member to publish peer-reviewed papers in technical or educational journals.
3. Encourage and help faculty members who have an interest in publishing textual materials.
4. Encourage every faculty member to present papers in technical or educational conferences, and provide funding for travel when needed.

Goal 2: Develop and strengthen collaborative relationships between EET and the industry for research and development.
Objectives related to this goal are:
1. Increase awareness of the willingness and capabilities of the faculty to collaborate within industry.
2. Encourage faculty to contact and visit engineering/manufacturing companies to develop mutually beneficial projects.

Goal 3: Contribute to the economical growth of the state, nation, and world through applied research.
Objectives related to this goal are:
1. Help faculty recognize the need and direction of the state and nation for applied research and to search for ways in which they may contribute.

Objectives for extension and public services

Goal 1: Develop training seminars for engineers in industry in selected areas.
Objectives related to this goal are:
1. Encourage the faculty to develop and deliver engineering technology short courses.
2. Publicize applications of electrical engineering technology.

Goal 2: Provide educational opportunities to employees in engineering/manufacturing companies.
Objectives related to this goal are:
1. Publicize educational opportunities to employees in engineering/manufacturing firms.
2. Offer televised courses for students in other locations.

4. **Expected program outcomes of the Electrical Engineering Technology program (ABET 2000)**

The expected program outcomes for graduates (as defined by TAC of ABET) of the Electrical Engineering Technology department are graduates who:
- demonstrate an appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines,
- apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology
- conduct, analyze and interpret experiments and apply experimental results to improve processes,
- apply creativity in the design of systems, components, or processes appropriate to program objectives,
- function effectively on teams,
- identify, analyze, and solve technical problems,
- communicate effectively,
- recognize the need for and possess the ability to pursue lifelong learning,
- understand professional, ethical, and social responsibilities,
- recognize contemporary professional, societal, and global issues and are aware of and respect diversity, and
- have a commitment to quality, timeliness and continuous improvement.

These expected outcomes, or a similar set, must be addressed and adopted to assure continued accreditation. That being the case, EET will focus its energies in developing tools and processes to insure that the expected program outcomes are achieved. The present evaluation methods detailed in Section 5 of this report will form the initial basis for our response to ABET for the year 2005 report.

5. Methods used to evaluate program outcomes

The EET department has over the years used the following methods to evaluate program outcomes:
- Portions of the national Fundamentals of Engineering exam administered in Senior Projects (EET4833).
- Exit surveys from graduating seniors
- Feed back from alumni.
- Employer surveys
- Employment statistics .
- Feedback from EET industrial advisory board.

In addition to these the following tools are presently being developed (or re-done) to assist in formulating a process of continuous educational and program evaluation:

1. a Course Educational Objectives form, and implementation and usage instructions.
2. the Senior Exit Interview Form and accompanying implementing instructions.
3. an Employer Survey instrument and to identify mode of implementation.
4. overhaul the Alumni Survey.
5. finalize & publish Program Outcomes Plan.
6. publicize Program Educational Objectives.
7. the Continuous Quality Improvement (CQI) Plan.
8. the Course vs Program Outcomes compliance matrix.

The following course evaluations, national surveys and examination are being added (or modified to local needs) to provide measurable outcomes:
- Capstone design course performance
  The capstone course will use external jurors to evaluate course objectives. Survey instruments to be used for course evaluation will be modeled after the SUCCEED (http://www.succeed.ufl.edu/) survey instrument developed for capstone courses.
  Specific survey instruments available for the capstone course from SUCCEED include:
  > Instrument A - Student Survey
  > Instrument B - Faculty Course Instructor or Coach Survey
  > Instrument C - Industrial Coach or Project Contact/Sponsor Survey
  > Instrument D - Student Peer Survey
  > Instrument E - Project Scoring Rubric for Final Project Presentations

- University national surveys provided by the OUA

6. Assessment results are integrated into curriculum planning and program improvement by means of the department's Continuous Quality Improvement Plan (CQIP) that is structured as follows:

A. Inputs to the CQIP are solicited and/or incorporated from the following sources
   - Industrial Advisory Council (TAC/ABET accreditation requirement)
   - Measurements of degree of compliance with both course and program educational objectives
   - Student Exit Survey/Interview
   - Alumni Assessment Survey
   - Employer Satisfaction Survey
   - ABET Accreditation Reports
   - Results of the partial Fundamental of Engineering exam administered in Senior Projects (EET4833)
   - Assessment tools of paragraph 5 above.

B. EET prepares Summary Report of information from the CQIP sources

C. The Summary Report is submitted to the IAC

D. IAC and EET faculty discuss Summary Report
   - Review past recommendations
   - Make suggested curriculum and program changes
   - Set timelines for implementation

E. Prepare OSU Assessment Report

F. Prepare Summary Newsletter for students/alumni/employers

4 Jun '03