

Unit Effectiveness Plan for 2001-2002
Department(Unit): Electrical Engineering
College (Division): Dean - College of Engineering

Unit Mission or Purpose:

1. Provide high-quality educational programs at the baccalaureate, masters, and doctoral level.
2. Perform original research in the many disciplines of electrical engineering.
3. Provide service to the university and to the engineering profession through faculty and student involvement.

Articulation of how unit mission/purpose relates to University mission:

As one of many academic components of the University, the Department of Electrical Engineering supports the University mission by offering undergraduate and graduate degree programs that enhance the University's position as a comprehensive educational institution. By pursuing research programs individually and in cooperation with other departments, the department provides the opportunity to discover new knowledge and instills in the students a desire to pursue knowledge and truth, a sense of professionalism, and a commitment to life long learning.

Intended outcome	Related Institutional Goal/Objective/Strategy	Action Steps	Method of Assessment (Who, What, When)	Results of Assessment	Proposed Changes and Recommendations for Improvement	Resources Needed for Proposed Changes
<p>1. Undergraduate Education</p> <p>Undergraduate students will acquire the technical abilities and the professionalism expected of graduates of an ABET accredited program including:</p> <p>i. ability to design system, component, or process to meet needs;</p> <p>ii. ability to use the techniques, skills, and</p>	<p>Goal 1: The University of Texas at Arlington will provide an environment that fosters broad-based education as well as professional studies designed to facilitate successful careers, personal development, and community service.</p> <p>1.1: To promote and sustain the excellence of undergraduate programs that prepare students for careers in industry and</p>	<p>A standing undergraduate curriculum committee (UCC) will assess individual course content and review the curriculum annually to insure that current electrical engineering concepts and applications are included.</p> <p>Upgrade and maintain instructional laboratories with state-of-the-art equipment.</p> <p>Require EE 1347</p>	<p>Annual review and evaluation of ABET goals and objectives.</p> <p>Generic and course-specific content evaluations in all courses.</p> <p>A yearly survey sent by the College of Engineering to employers of UTA EE students assessing key skills and competencies required by ABET.</p>	<p>UG Student Surveys rate the overall quality of the EE program with a score of approx. 3.8 on a scale of 5. Alumni Surveys done in Dec. 2000 and 2001 (on 98-99 and 99-00 graduates) rate the teaching of the UG program also at about 3.7/5. Both indicate good quality of the program.</p>	<p>Continue to strengthen the student's ability to design through: Increasing and improving lab facilities. Making software tools more accessible to students outside of regular EE labs. Updating and strengthening some Capstone Design courses.</p>	<p>Funds and space for labs and equipment, especially in connection with Capstone Design courses such as the microprocessor capstone design course.</p> <p>Funds for hiring additional tenure-track faculty.</p>

<p>modern engineering tools necessary for engineering practice</p>	<p>further studies at the graduate level.</p>	<p>Computer Solution of EE Problems to ensure computer literacy and problem solving skills.</p> <p>Require SPCH 3302 to ensure student ability to communicate effectively.</p> <p>Require EE 3340 EE project management as capstone prerequisite to include planning, teamwork, problem solving, oral presentations, written reports</p> <p>Require EE 434X capstone design courses to include teamwork, problem solving, design, oral presentations, written reports, and computer use.</p>	<p>A survey sent by the EE Dept. to BSEE graduates 2 years out of school and their employers assessing key skills and competencies required by ABET.</p> <p>Senior exit interviews; end of Fall and Spring semesters.</p> <p>Instructors in EE 434X, along with invited members of industry, evaluate designs, reports, and final presentations and demonstrations on a certain set of criteria.</p> <p>Industrial Advisory Board (IAB) survey; each long semester.</p>	<p>UG Student Surveys show high scores (~4 out of 5) on ABET outcomes a, f, g and i, consistent with the findings of the previous biennial UEP.</p> <p>Outcomes scores for c (design), j (contemporary issues) and k (engineering tools) show slight increases, in part due to actions implemented to improve the UG program.</p> <p>ABET outcome score on c, though not low (~3.6/5), continues to be the one deserving the most attention among the a-k category.</p> <p>Course-specific surveys of classes indicate a need of streamlining the undergraduate curriculum, which will be taken up by the UG Curriculum Committee as it</p>	<p>When preparing for the new Undergraduate Catalog, revise the description of EE1245 in regard to course description and pre-requisite requirement.</p> <p>Increase the number of undergraduate faculty in specific areas to make the class schedules more flexible to students.</p> <p>Revise some course-specific questionnaires.</p>	
--	---	--	---	---	--	--

				<p>convenes to prepare for the upcoming biennial Undergraduate Catalog.</p> <p>The surveys also point to the need to make some changes in the evaluation questionnaires to better capture the student feedback.</p> <p>Feedback from the advising office shows that some freshmen have difficulties for the class EE1245.</p> <p>Student feedback through the Undergraduate Advisor indicates that the students could be better served by rotating the offering times of a given course on a yearly basis.</p>		
<p>2. Advising</p> <p>Each preEE student will make satisfactory progress, based on individual capabilities, toward admission to the</p>	<p>Goal 1: The University of Texas at Arlington will provide an environment that fosters broad-based education as well as professional studies designed to facilitate</p>	<p>Develop a computer database of all preEE and EE students. Track each student to determine his or her progress. Require all students with academic problems to attend a peer</p>	<p>Survey of students by the EE Advising Office to determine their perception of academic advising and what improvements are needed.</p>	<p>UG Student Surveys rate the quality of the undergraduate advising at ~3.7 out of a maximum of 5, indicating a general satisfaction.</p>	<p>Hire a full-time graduate advising assistant.</p>	<p>Funds for an additional position.</p>

<p>professional EE program.</p> <p>Each preEE student with academic problems will obtain peer tutoring or career counseling.</p> <p>Each EE student will attain his or her personal academic goals within the constraints of the professional program.</p> <p>Each EE student will be able to select electives to meet their career goals.</p> <p>EE students will be satisfied with their advising experience.</p>	<p>successful careers, personal development, and community service.</p> <p>Goal 2: The University of Texas at Arlington will provide access to learning opportunities for all students</p>	<p>tutoring program or have academic counseling.</p> <p>Any student that fails an engineering course would be required to have academic advising.</p> <p>A two year schedule of course offerings, including night courses, will be posted and followed.</p> <p>The database will be used to determine if students have the prerequisites for the courses they are taking.</p>	<p>The EE Advising Office will track students that have academic problems to determine if they are taking courses in the correct sequence and the effect this has on their progress.</p> <p>The EE Advising Office will track students to determine reasons students are not making progress or are dropping out.</p> <p>Survey of faculty by the EE Advising Office at the end of the academic year to determine their perception of academic advising and what improvements are needed.</p> <p>A survey sent by the EE Department to BSEE graduates two years out of school assessing quality of advising received.</p> <p>Senior exit interviews; end of Fall and Spring semesters.</p> <p>Examination of enrollment data.</p>	<p>Alumni Surveys in December of 2000 and 2001 also gave a fair rating of 3.55/5.</p> <p>The 2001 SPAS survey done by the COE shows that student assessments of undergraduate advising exceed college average in both advising quantity and advising satisfaction.</p> <p>The 2001 SPAS survey done by the COE also indicates significant improvements on "teaming" and "professional ethics" as students move from junior to senior level courses.</p> <p>Enrollment data for Fall 2002 show a jump of 38% in headcount over last year for the graduate program. The increase in student credit hours for the same period for both</p>		
---	--	---	---	---	--	--

				<p>the graduate and undergraduate program is 21%. This necessitates more resources for the graduate advising office if the quality of advising is to be maintained/improved.</p> <p>The 2002 GSPAS survey done by the COE shows a need to improve the quality of graduate advising.</p>		
<p>3. Graduate Education</p> <p>Graduate students will acquire the abilities expected of graduates of excellent academic programs including:</p> <p>i. ability to apply knowledge of math, engineering and science;</p> <p>ii. ability to use the techniques, skills, and modern engineering tools necessary for modern engineering practice</p>	<p>Goal 4: The University of Texas at Arlington will support an environment conducive to basic and applied research and creative activity, and the acquisition, preservation, and dissemination of knowledge.</p> <p>Objective 4.1 To increase the University's commitment to research and creative activity.</p> <p>Goal 5: The University of Texas at Arlington will ensure that research programs of the highest quality involve qualified students.</p>	<p>The EE Graduate Studies Committee continuously assesses individual course content and reviews annually the curriculum to ensure that current and emerging new concepts and applications are included.</p> <p>Increase efforts to obtain financial support for graduate students by means of funded research and scholarships.</p> <p>Increase the Distance Education offerings.</p>	<p>Teaching evaluations in graduate courses.</p> <p>Determine the number of journal publications resulting from graduate student research.</p> <p>A survey sent by the College of Engineering to employers of UTA EE students that assesses the following: 1) theoretical knowledge and concepts; 2) engineering techniques, skills, and tools; 3) professional ethical responsibilities; 4) ability to function on multidisciplinary teams; 5) ability to learn new methods and skills; and 6)</p>	<p>Enrollment data for Fall 2002 show a jump of 38% in headcount over the last year for the graduate program. In order to maintain/improve the quality of the program, additional resources are required.</p> <p>Enrollment data also show some large classes for the graduate program.</p> <p>Evaluation from the Graduate Advising Office indicates that there is not enough</p>	<p>Increase space available for the graduate program.</p> <p>Increase/fill the number of faculty openings vacated through retirement/resignation.</p> <p>Make some class sizes smaller.</p> <p>Professors in individual courses are requested to emphasize ethics and academic honesty in their classes, at the beginning of and also during the semester.</p>	<p>Additional faculty.</p> <p>Additional space.</p> <p>Fund to upgrade classroom equipment.</p>

	<p>Objective 5.2 To recruit and retain highly qualified graduate and undergraduate students.</p>		<p>ability to communicate effectively.</p> <p>Examination of enrollment data.</p> <p>2002 GPAS Survey on graduate students conducted by COE.</p> <p>MSEE thesis or thesis substitute student performance related to style, grammatical correctness and technical content will be assessed in an oral defense session by a committee of 3 professors.</p> <p>MSEE non-thesis student performance will be assessed in EE distributed-core courses where they must obtain a GPA of 3.3 in order to graduate.</p> <p>Ph.D. student performance will be assessed in the Research Potential Assessment oral exam by a committee of 3 professors. Their performance is additionally judged during their performance is additionally judged during</p>	<p>office space for the increasing number of TA's.</p> <p>Instructors feedback points to a need to upgrade/improve the teaching equipment in classrooms.</p> <p>Evaluation from COE Ethics Committee indicates a strong need in emphasizing ethics and academic honesty, especially in the graduate student body.</p>		
--	--	--	--	---	--	--

			their Dissertation defense by a committee of 5-6 professors.			
<p>4. Research</p> <p>Increased research funding and graduate student support.</p> <p>Increased research reputation of the Electrical Engineering Department and the University.</p>	<p>Goal 4: The University of Texas at Arlington will support an environment conducive to basic and applied research and creative activity, and the acquisition, preservation, and dissemination of knowledge.</p> <p>Objective 4.1 To increase the University's commitment to research and creative activity.</p> <p>Objective 4.2 To increase the number of opportunities for faculty development</p> <p>Goal 5: The University of Texas at Arlington will ensure that research programs of the highest quality involve qualified students.</p>	<p>Continue efforts to improve research facilities.</p> <p>Get more undergraduate students involved in research projects and interested in graduate school and recruit more aggressively externally.</p> <p>Establish closer relationship with industrial and government research funding agencies.</p> <p>Provide research salary supplements to the most productive researchers.</p> <p>Factor research productivity into merit raise considerations.</p> <p>Identify trends in research and front-line topics.</p>	<p>Through annual Faculty Activity Reports, the Department chairperson will be responsible to:</p> <p>Track number of research proposals submitted by EE faculty and the number of funded proposals.</p> <p>Track number of funded proposals and dollar amounts.</p> <p>Track number of journal papers and conference presentations given by faculty and graduate students.</p> <p>Track number of Ph.D. students and MSEE thesis students supported and graduated.</p> <p>Track faculty involvement in reputable professional societies, awards received, and recognition of outstanding contributions (indicator of increased reputation).</p>	<p>In 2000-2001, the number of proposals submitted by faculty was 47, the number of journal and conference papers submitted was 87.</p> <p>Many faculty fare very well in proposal submission and funding. There are 6 IEEE Fellows among the faculty including Dr's. Chen, Lewis, Kondraske, Fung, Rao, and Prabhu..</p> <p>Continue to work on improving the departmental average.</p> <p>Successfully hired six tenured-track faculty in the telecommunications, MEMS, microelectronics and optics areas.</p> <p>Enrollment data for Fall 2002 show a jump of 38% in headcount over the</p>	<p>Increase space available for research facility.</p> <p>Increase the number of graduate/research faculty.</p> <p>Continue to develop in the nanofabrication and MEMS area.</p> <p>Continue to attract high quality graduate students through offering assistantships, and through the REU program funded by NSF.</p> <p>Stay active in research consortia MRCEM and TxTEC.</p>	<p>Funds for more faculty openings.</p> <p>Space for research labs.</p>

				last year for the graduate program. This represents a great potential for increasing research activity if corresponding resources are provided.		
5. Service Faculty service to the EE community and profession will increase.	Goal 6: The University of Texas at Arlington, in partnership with the broader community, will contribute to dynamic and continuing economic, social, and cultural development.	Encourage EE faculty to become active in professional societies. Activities should include chairing sessions, reviewing papers, serving as officers, serving on technical committees, and serving as EE program evaluators for ABET.	Chair will track number of faculty active in professional organizations and level of contributions. This information is included in the Annual Activity Report produced by each faculty member. 2002 GPAS Survey conducted by COE on graduate students.	Most EE faculty are active in committees at the Departmental, College and University levels. Out of a total of 30 tenured and tenured-track faculty, 10 serve in the professional community in various ways. Examples of positions are: Vice Chairman, Utility Deregulation Sub-Committee; VP, USA Chinese Institute of Engineers; and Chairman of Technical Program Committee for 2001 International Microwave Symposium. There are currently 6	Continue to encourage service of faculty within the university and in professional organizations as well as community. Need to encourage more faculty to take part in student activities and get to know them on a more personal level. Put more weight on faculty evaluation on service, especially in relation to student activities and involvement.	Additional funds to support faculty travel for service and professional activities.

				<p>IEEE Fellows among the EE faculty.</p> <p>The 2002 GSPAS Survey shows a substantially lower score than the COE average regarding students' perception of being known by their professors by name. The same result is also indicated by the 2001 SPAS survey done on the undergraduate students.</p>		
<p>6. Oral Communications</p> <p>All EE students will demonstrate proficiency in oral communications.</p>	<p>Goal 1: The University of Texas at Arlington will provide an environment that fosters broad-based education as well as professional studies designed to facilitate successful careers, personal development, and community service.</p> <p>Objective 1.1: To promote and sustain the excellence of undergraduate programs that prepare students for careers and graduate studies.</p>	<p>Require SPCH 3302 to ensure student ability to communicate effectively.</p> <p>Require EE 3340 EE project management as capstone prerequisite to include planning, teamwork, problem solving, oral presentations, written reports</p> <p>EE 434X capstone design courses require formal oral presentations.</p>	<p>SPCH 3302 is a required course that must be completed successfully before BSEE degree is bestowed.</p> <p>Oral presentations in capstone design courses are evaluated by the instructor using a checklist of required points to be addressed.</p> <p>A survey sent by the EE Dept. to BSEE graduates 2 years out of school and their employers assessing key skills and competencies required by ABET.</p>	<p>Employer Surveys done in December of 2000 and 2001 rate the graduates' ability to communicate effectively above 4 on a 5 point scale, indicating a high level of satisfaction.</p> <p>The 2002 GSPAS Survey shows a need to improve "teaming" and "communications" for the graduate students.</p>	<p>Continue to keep and promote a high level of oral communication skill of the graduates of the BSEE program.</p> <p>Introduce more communications training in graduate courses whenever possible.</p>	

			Annual student survey in selected classes on ABET competencies and other issues. 2002 GPAS Survey conducted by COE.			
7. Computer Proficiency All students will demonstrate proficiency in computer literacy including word processing, use of spreadsheets, use of email, use of the internet for research and use of on-line library resources.	Goal 1: The University of Texas at Arlington will provide an environment that fosters broad-based education as well as professional studies designed to facilitate successful careers, personal development, and community service. Objective 1.1: To promote and sustain the excellence of undergraduate programs that prepare students for careers and graduate study.	Require EE 1347 Computer Solution of EE Problems to ensure computer literacy and problem solving skills. Require EE 3340 EE project management as capstone prerequisite to include planning, teamwork, problem solving, oral presentations, written reports, and computer use. EE 434X capstone design courses require computer use for production of final reports, presentation, and data analysis.	Instructors in EE 1347 and EE 434X evaluate student performance on computer-related assignments. Annual student survey in selected classes on ABET competencies and other issues. A yearly survey sent by the College of Engineering to employers of UTA EE students assessing key skills and competencies required by ABET. A survey sent by the EE Dept. to BSEE graduates 2 years out of school and their employers assessing key skills and competencies required by ABET.	Employer Surveys done in December of 2000 and 2001 rate the graduates' ability to use skills and tools, including computer tools, above 4 on a 5 point scale, indicating a high level of satisfaction.	Introduce more computer-aided tools in classes, both graduate and undergraduate. For example, the software "electronic work bench" should be installed in OIT labs, so students can have wider and easier access to it.	Funds for license for more software tools. Funds for supporting more faculty in the development of internet-based courses.

[Click here to go back to Options Screen](#)

