

DATE: July 27, 2006

SUBJECT: University of Tennessee Chattanooga, Bachelors of Science in
Electrical Engineering

ACTION RECOMMENDED: Approval

BACKGROUND INFORMATION: The proposed program has existed and evolved at the University of Tennessee at Chattanooga for over three decades as one of five specialty areas; Electrical, Mechanical, Chemical, Civil, and Industrial Engineering. Under the Bachelor of Science in Engineering, it is ABET accredited for Nontraditional Engineering Programs. Within the last ten years, in response to students and local employers, the program added additional depth and breadth in Electrical Engineering content and pursued accreditation from ABET under the Electrical Engineering criteria. This accreditation, for the maximum six-year period possible under ABET guidelines, was awarded at the beginning of the 2004-2005 school year. The proposed request is to establish Electrical Engineering as a free standing degree to more accurately reflect the enhanced accreditation status and provide more options for graduates.

PROPOSED START-UP DATE: Fall 2006

Commission staff has reviewed program proposals according to the academic standards adopted by the Commission on November 14, 2002. Each standard is referenced below.

1.1.20A MISSION: The proposed program is consistent with the role and scope of the university. “UTC is dedicated to the education of students: to providing quality education to a diverse population of students to...enlighten and discipline their minds and their preparation for ethical and active leadership in civic, cultural, and professional life.” UTC is committed to “utilizing its intellectual resources and external partners to serve as a national model of an engaged metropolitan university whose faculty, staff, and students, in collaboration with external partners, employ the intellectual resources of the liberal arts and professional programs to enrich the lives of those served.”

1.1.20B CURRICULUM: The proposed curriculum requires completion of 128 semester hours. All courses are currently offered in the existing concentration. The primary changes will be the criteria requirements of ABET that all students be able to design a component or process to specifications and the program have a capstone design experience which serves as a culmination of all courses. The series of design courses taken by all engineering students integrate both study of the elements of design and design projects throughout the curriculum to give students a realistic experience of engineering practice in modern industry.

1.1.20C ACADEMIC STANDARDS: Admission, retention, and graduation requirements will be consistent with the institutional requirements of other undergraduate programs in the College of Engineering, as published in the institution's *Catalog*.

Student Projections	Projected Program Productivity		
	Full-time Enrollment	Part-time	Graduates
Year 1	65	28	16
Year 2	70	30	17
Year 3	80	35	18
Year 4	85	40	19
Year 5	100	45	20

1.1.20D FACULTY: The electrical engineering faculty consists of six positions, one of which is currently vacant. No additional faculty is required.

1.1.20E LIBRARY RESOURCES: No additional library resources are required.

1.1.20F ADMINISTRATION/ORGANIZATION: The proposed program will be housed in the College of Engineering and administered by the Director of the Computer Science and Electrical Engineering Department.

1.1.20G SUPPORT RESOURCES: None indicated

1.1.20H FACILITIES/INSTRUCTIONAL EQUIPMENT: In summer 2003 the College of Engineering and Computer Science at UT Chattanooga moved into a new Engineering, Mathematics, and Computer Science (EMCS) building. This 200,000 square foot facility provides adequate space and instructional equipment for all existing programs.

1.1.20I STUDENT/EMPLOYER DEMANDS: The need for the existing Electrical Engineering concentration is well established. Since its inception over three decades ago, the program has produced approximately 400 graduates, who go on to work regionally and nationally or go on to attend graduate school. A recent survey of senior EE students indicated that the typical senior is working an average of 15.3 hours per week, while taking a course load of 14.9 hours. The strong ties students have to the community, the older age of students compared to those at a typical program, and the number who are working their way through school, combine to make the EE program at UTC in high demand in the area. More than 92 percent of UT Chattanooga students are residents of Tennessee and approximately 57 percent are from Hamilton County. A recent survey of EE juniors and seniors indicated that approximately 82 percent believe that establishing Electrical Engineering as a free standing degree to be a positive change.

1.1.20J NO UNNECESSARY DUPLICATION: Due to demand and location, approval of the proposed program is not expected to have a significant impact on enrollment at

any other institution in the state.

1.1.20K COOPERATIVE INSTITUTIONS: None indicated.

1.1.20L DESEGREGATION: The program will not impede the state's effort to achieve racial diversity.

1.1.20M ASSESSMENT/EVALUATION AND ACCREDITATION: The existing Electrical Engineering concentration at UTC fully meets all ABET requirements for Electrical Engineering programs and was awarded the maximum six year term of accreditation in Fall 2004. The UTC concentration received this maximum rating during its first cycle for accreditation under the Electrical Engineering guidelines. The assessment methods currently in place include an annual survey of seniors and alumni, evaluation of course folders, the results from students taking the Tennessee Fundamentals of Engineering exam, survey of local businesses and industry, and annual evaluations of the number of students hired at graduation or continue their education.

1.1.20N ARTICULATION: N/A

1.1.20O EXTERNAL JUDGMENT (Graduate Programs): N/A

1.1.20P COST/BENEFIT/SOURCE: Most of the engineering students at UT Chattanooga are from the counties that make up the Chattanooga metropolitan area within Tennessee borders. UT Martin is the only other university in Tennessee that awards BSE degrees. Immediate, tangible benefits will accrue to graduates. Long term benefits will accrue to the university by making it easier to recruit new students because of the ability to award the discipline specific degree. There are no additional costs associated with establishing the concentration as a free standing degree.

1.1.30 POST APPROVAL MONITORING: An annual performance review of the proposed program will be conducted for the first five years following approval. The review will be based on goals established in the approved program proposal. At the end of this period, campus, governing board, and Commission staff will perform a summative evaluation. These goals include, but are not limited to enrollment and graduation, program costs, progress toward accreditation, library acquisitions, student performance and other goals set by the institution and agreed upon by governing board and Commission staff. As a result of this evaluation, if the program is found to be deficient, the Commission may recommend that the governing board terminate the program. Copies of such recommendation will be forwarded to the Education Committees of the General Assembly. The Commission may also choose to extend this period if additional time is needed and requested by the governing board.