

DATE: November 10, 2011

SUBJECT: Tennessee Technological University B.S. in Environmental and Sustainability Studies with three concentrations:
 (1) Environmental Science
 (2) Society, Culture, and Communication
 (3) Environmental Technology

ACTION RECOMMENDED: Approval

BACKGROUND INFORMATION: The proposed Tennessee Technological University (TTU) B.S. in Environmental and Sustainability Studies will complement and support a number of established TTU STEM (science, technology, engineering, and mathematics) investments. The program will (1) align to the existing interdisciplinary Environmental Science doctoral program; (2) fulfill the educational goal of TTU’s Center of Excellence for the Management, Utilization, and Protection of Water Resources to enhance research, university instruction and educational outreach; (3) draw on the resources of the University’s Environmental Village; and (4) capitalize on the services of the TTU Millard Oakley STEM Center, which fosters innovation in teaching and learning.

PROPOSED START-UP DATE: Upon approval.

1.1.20A MISSION: The goals of the program are in accord with TTU’s mission as the State’s comprehensive university concentrating in engineering and the STEM disciplines.

1.1.20B CURRICULUM: The program will focus on developing students’ abilities to find solutions to environmental problems through an interdisciplinary approach to teaching and learning. The program will require completion of 120 semester hours, including a 41-hour general education core, a 34-hour major core, and concentrations of 45 semester hours of specialized and elective courses appropriate to the concentration. The three concentrations are: (1) Environmental Science, a synthesis of sciences with a focus on the environment; (2) Society, Culture, and Communication, a focus on the communicating the complex societal and scientific factors relevant to environmental issues; and (3) Environmental Technology, an option leading to application of GIS tools and data use in environmental decision-making.

Program implementation will require the creation of six new courses (18 credit hours). The program will draw on existing courses from a number of disciplines (civil and environmental engineering, biology, chemistry, earth sciences, and economics) in a cross-disciplinary collaboration.

1.1.20C ACADEMIC STANDARDS: The admission, retention, and graduation requirements are the same as those described in the TTU *Undergraduate Catalog*.

Projected Program Enrollment and Productivity:

The University based enrollment projections on the results of student surveys to determine interest in the program and projected job growth in associated fields.

Year	Full-Time Headcount	Part-Time Headcount	Total Year Headcount	Total FTE Fall Enrollment	Graduates
1	10	0	10	10	0
2	25	0	25	25	0
3	45	0	45	45	2
4	60	0	60	60	7
5	75	0	75	75	12

1.1.20D FACULTY: The program will be staffed through a collaboration of disciplines, with no additional faculty positions required.

1.1.20E LIBRARY RESOURCES: Library resources are adequate to support the program.

1.1.20F ADMINISTRATION/ORGANIZATION: The program will be administratively housed in the School of Interdisciplinary Studies.

1.1.20G SUPPORT RESOURCES: As an interdisciplinary program, the B.S. in Environmental and Sustainability Studies will have research and instructional affiliations with the colleges of Engineering, Agricultural and Human Sciences, Arts and Sciences, Education, and Business. Additionally the program will be positioned to benefit from its relationship with the TTU Center of Excellence for Management, Utilization, and Protection of Water Resources, its alignment with the TTU doctoral program in Environmental Sciences, and its association with other TTU STEM emphases.

1.120H FACILITIES AND EQUIPMENT: Facilities and equipment are adequate to support the program.

1.1.20I NEED AND DEMAND: Graduates will be prepared for employment as environmental specialists in federal, state, and local governments and in management, scientific, and technical consulting services. Other placements include architectural, engineering, and hazardous materials removal and other activities related to environmental regulations. National labor market projections chart an increasing demand for professionals in environmental sustainability. The university has

surveyed employers in environment-related fields in the mid-state area and received a positive response regarding employment opportunities for graduates.

1.1.20J NO UNNECESSARY DUPLICATION: While four bachelor's degrees in the field of environmental studies and several concentrations in environmental studies within other degree majors are available at Tennessee universities, the proposed program at TTU is singular in its interdisciplinary and sustainability focus with the availability of the Center of Excellence research and outreach resources behind it. Furthermore, the existing programs accentuate different missions of the sponsoring institutions (ETSU, health; MTSU, technology; UTK, pre-environmental science teaching; UTC, earth sciences and engineering). The TTU STEM and engineering specialties frame the TTU proposed program

1.1.20K COOPERATING INSTITUTIONS: N/A

1.1.20L DIVERSITY AND ACCESS: The University will address its diversity goals in recruitment and student support.

1.1.20M ASSESSMENT/EVALUATION AND ACCREDITATION: No discipline-specific accreditation applies to the program. The internal evaluation of the program will be comprehensive and will include assessment tools such as alumni surveys, employer surveys, and continued monitoring by the Environmental and Sustainability Studies Faculty Associates Committee and Advisory Board. Additionally, student feedback and faculty evaluations will inform the continuous improvement of the program. As a program for which a specialized accreditor does not exist, the bachelor's degree major will be evaluated through the THEC Performance Funding program traditional program assessment model on a recurring basis.

1.1.20O EXTERNAL JUDGMENT: THEC policy does not require external evaluators for a proposed new undergraduate degree program.

1.1.20P COST/BENEFIT: Tuition and fees are expected to be generated the first year of program implementation, and tuition revenue is projected to exceed program costs by program maturity. There are no anticipated differential fees and only nominal new costs are anticipated. Existing faculty, space, and equipment are sufficient for program operation, and the interdisciplinary nature of it constitutes a broad budgeting base. The total Year 1 projected expenditures of \$45,000 include administrative stipends and the addition of one support staff. In years 2-5 recurring expenditures for adjuncts are about \$14,000 annually.

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 benchmarks established in the approved program proposal. At the end of this period, campus, governing board, and Commission staff will perform a summative evaluation. The benchmarks include, but are not limited to, enrollment and graduation, program cost, progress toward accreditation, library acquisitions, student performance, and others set by the institution and agreed upon by governing board and Commission staff. As a result of this evaluation, if benchmarks are not met during the monitoring period, the Commission may recommend that the governing

board terminate the program. The Commission may choose to extend the period, if additional time is needed and requested by the governing board.